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SOUTH CAROLINA FOREST GROWTH AND DRAIN
1936 - 1943

by

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A FOREST SURVEY PROGRESS REPORT

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PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Middle Atlantic States the Forest Survey is an activity of the Appalachian Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes growth and drain information for the 8-year period, 1936-1943, and deals specifically with forest growth and drain, by survey units, for each year since the original forest inventory of the State.

Grateful acknowledgment is given Miss Agnes Creasman, of the Survey staff, who was responsible for compiling most of the statistics in this report.

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SUMMARY

The volume of sound, live timber in South Carolina, as of January 1, 1944, amounted to 126 million cords, including 29.7 billion board feet of saw timber. This represents a gain in 8 years, since January 1, 1936, of 2.1 million cords in total growing stock but a loss of 407 million board feet in standing saw timber.

Accordingly, the forest growing stock in South Carolina has held up reasonably well for the State as a whole--the above changes representing a 1.7 percent increase in total volume and only 1.4 percent loss in the amount of saw timber. A closer analysis, however, will show that conditions regarding certain species, size classes, and geographical units are far from satisfactory, as, for example, (1) the supply of cypress saw timber is rapidly being exhausted, (2) a serious shortage of both pine and good quality hardwood saw timber is in prospect for the northern coastal plain area, and (3) the general trend in the State is toward a stand of immature, low quality hardwoods. Furthermore, in several counties of the piedmont, where there is a heavy concentration of pulpwood cutting, this trend has been greatly accelerated.

As an item of drain, pine pulpwood showed the most spectacular increase. In 1936 only 1 percent of the pine went into pulpwood; by 1943 nearly one-fourth of the pine cut was for this product. In order of importance lumber, fuelwood, pulpwood, and veneer were the principal items of drain, comprising 93 percent of the total from 1936 through 1943. In those 8 years the cut of saw timber amounted to 11.8 billion board feet and the drain on all sound trees totaled 38.5 million cords.

During the 3 war years, 1941-1943, the average annual drain for all products was 28 percent more than the average for the previous 5 prewar years. The effect of the war on the volume of timber cut for fuelwood and veneer was insignificant, but pulpwood production was at an all-time high, and the cut of sawlogs was at a near-record rate.

The net growth of saw timber in the 8 years was 11.4 billion board feet. During the same period growth of the total sound-tree growing stock amounted to 40.5 million cords. The net change in growing stock resulting from comparison of net increment with commodity drain is summarized in the following tabulation:

(Saw timber - in million board feet)

Item	Pine	Cypress	Hardwood	Total
Growing stock, Jan. 1, 1936	18,431	1,381	10,305	30,117
Growing stock, Jan. 1, 1944	18,398	1,115	10,197	29,710
Net change	-33	-266	-108	-407
	Percent	Percent	Percent	Percent
	-0.2	-19.3	-1.0	-1.4

(All sound trees, 5.0 inches d.b.h. and larger - in M cords)

Growing stock, Jan. 1, 1936	66,206	4,172	53,574	123,952
Growing stock, Jan. 1, 1944	65,855	3,556	56,591	126,002
Net change	-351	-616	+3,017	+2,050
	Percent	Percent	Percent	Percent
	-0.5	-14.8	+5.6	+1.7

SOUTH CAROLINA FOREST GROWTH AND DRAIN

1936 - 1943

The purpose of this report is to show what has happened to South Carolina's timber supply during the eight years from January 1, 1936, to January 1, 1944. It includes a brief description of the forest resource as it was in 1936, detailed discussion of forest growth and drain during the 8-year period, and the trend in the supply of sound, live timber. Summary tables and charts are given in the text and are mainly concerned with the State as a whole. More comprehensive tables for each of the eight years are contained in the Appendix. One set shows by major subdivisions of the State (figure 1) annual drain by products in cords and board feet. A second set presents comparisons of growth and drain.

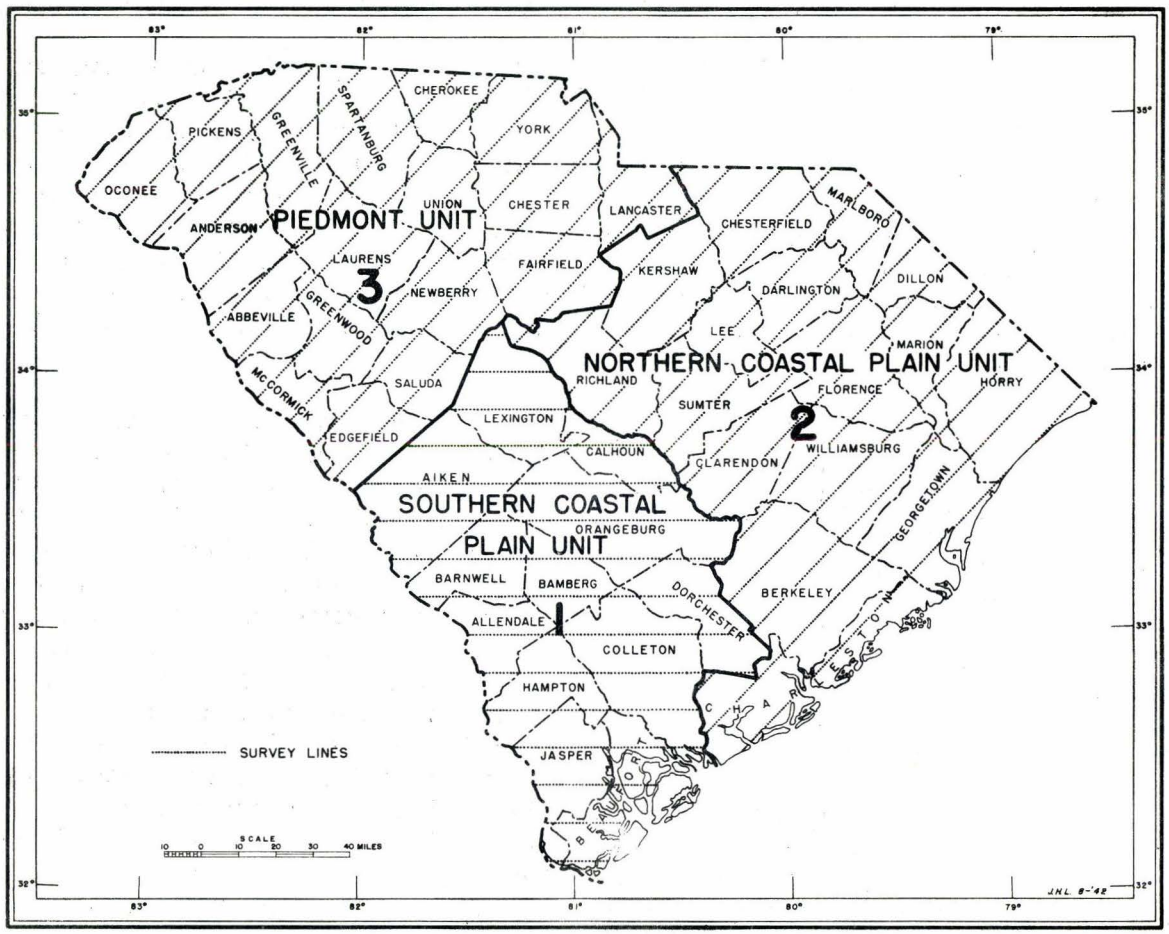

Figure 1. - Location of units and approximate survey lines in South Carolina.

THE FOREST RESOURCE, 1936[1/]

Area

In 1936 about 10.7 million acres (55 percent) of South Carolina's area was forest land (table 1). Approximately 25,500 acres consisted of brushy swamps, sand dunes, and other nonproductive areas. All of the remainder was classified as capable of producing a timber crop of commercial value. Within this large area of productive forest, the pine types predominated--7.8 million acres of pine as compared with 2.9 million acres of hardwoods (figure 2).[2/]

Table 1. - Land use in South Carolina, 1936

Land use	Total area	
	Acres	Percent
Forest:		
Commercial	10,678,600	55.0
Noncommercial	25,500	0.1
Agriculture	7,032,900	36.2
Abandoned cropland	551,800	2.8
Other nonforest	1,136,800	5.9
All uses	19,425,600	100.0

In its inventory of the State's forests the Forest Survey classed as saw timber all stands containing a volume of at least 600 board feet per acre. About 58 percent of the forest area (6.2 million acres) supported saw-timber stands. However, only 1.6 million acres consisted of old growth, of which 56 percent had been partly cut-over for selected species such as cypress. A few large blocks of old growth remained in the State, and these were owned mostly by large estates, game clubs, and lumber companies on the lower coastal plain.

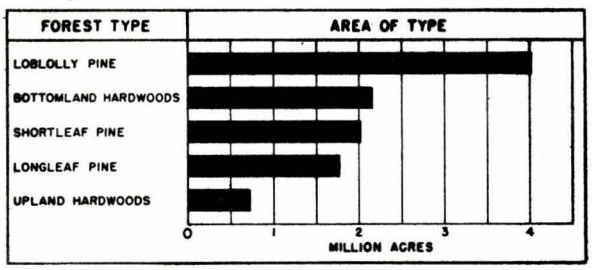

Figure 2. - Area of forest types in South Carolina, 1936.

The under-sawlog-size stands were subdivided into three condition classes: cordwood, reproduction, and clear-cut. The cordwood areas totaled 3.7 million acres and were most prominent in the piedmont where 44 percent of the forest acreage was of this condition class. Reproduction, chiefly less than one inch in diameter, occupied about 0.7 million acres. Clear-cut land amounted to 0.1 million acres, and almost one-half was found in the sand hill region of the coastal plain, where the dense understory of scrub oak remaining after the removal of the longleaf pine effectively prevented restocking by commercial species. Elsewhere the clear-cut area was chiefly recently cut-over or burned lands, upon which natural restocking had not begun.

1/For a more complete description of the forest resources of South Carolina see: Frothingham, E. H., and Nelson, R. M. South Carolina Forest Resources and Industries. USDA Misc. Pub. 552, 77 pp., illus., 1944.
2/See Appendix for definitions of terms used in this report.

Timber Volume

The volume of timber in the State, as measured by the Forest Survey in 1936, amounted to 30.1 billion board feet, or 158 million cords. The board-foot and cordwood volumes apply to the same material, except the latter contains, in addition to sawlogs, the tops of saw-timber trees, trees too small for sawlogs, and the sound material in cull trees.

Amount of saw timber: All saw timber was measured in terms of the International $\frac{1}{4}$-inch rule, which approximates the actual recoverable board-foot volume in terms of rough, green lumber. The quantity of hardwood contained in trees 13.0 inches and larger in diameter breast high amounted to about 10.3 billion board feet. The cypress inventory, which included trees 9.0 inches and larger d.b.h., was 1.4 billion feet. Pine volume, of a diameter range the same as cypress, totaled 18.4 billion feet. The distribution of saw-timber volume by species group is shown in figure 3. The greatest amount of saw timber was in the 16-county area forming the northern coastal plain. Estimated volume in that section amounted to 14.8 billion board feet, almost one-half of the State's total stand. The southern coastal plain, consisting of 12 counties, contained 9.5 billion feet. In the 18-county piedmont area only 5.8 billion feet of saw timber was found.

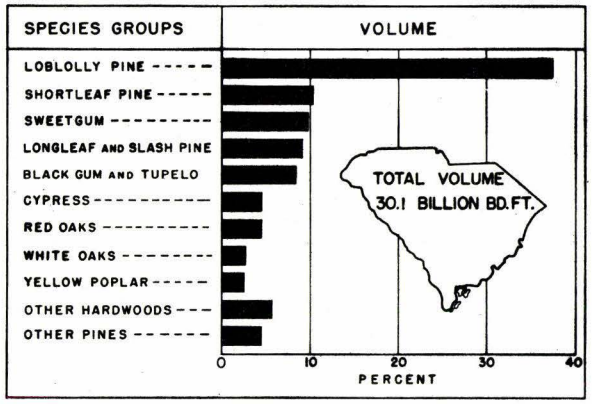

Figure 3. - Percent distribution of saw-timber volume by species groups in South Carolina, 1936.

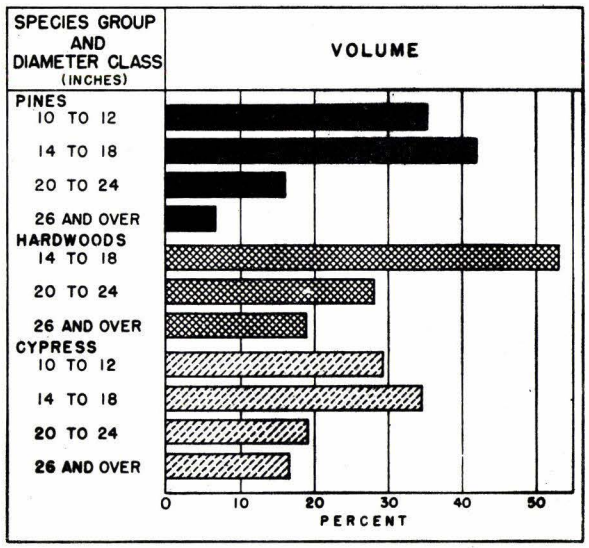

Figure 4. - Board-foot volume by species group and diameter group, South Carolina, 1936.

About 40 percent of the saw timber volume (11.6 billion board feet) was in the remaining old-growth forest. Three-fourths of the hardwood and cypress saw timber but only one-fourth of the pine were in this condition class. In the second-growth forest 17.4 billion board feet was in sawlog-size stands, and only 1.1 billion in the less advanced cordwood and reproduction areas.

As may be seen in figure 4, the saw-timber stand of 1936 consisted of a large proportion of small diameter trees. Consequently,

even at that time, the supply of large trees yielding lumber and other forest products of high quality was limited.

Quantity in cords: In 1936, the total sound volume in living trees 5.0 inches d.b.h. and larger was 158 million standard cords (hardwood 53 percent, pine 43 percent, and cypress 4 percent). This was in contrast to the board-foot volume which was 61 percent pine, 34 percent hardwood, and 5 percent cypress. A principal reason for the large hardwood volume in cords was that the proportion of cull trees, which are included in the cordwood volume, was much greater for hardwood than pine (figure 5). Of considerable significance was the fact that only 16.0 million cords of pine were contained in trees of less than sawlog size, indicating that an expanded pulpwood industry in the State would offer heavy competition to the lumber industry for the much larger volume contained in the saw-timber trees.

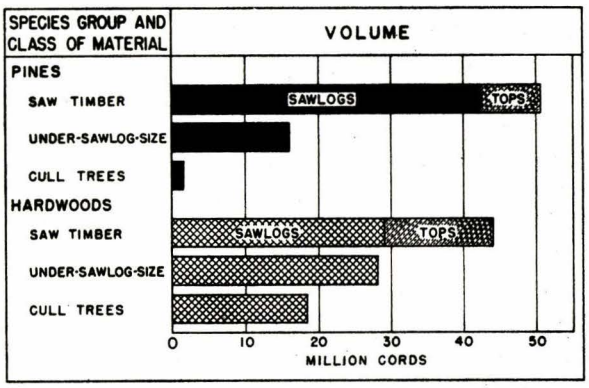

Figure 5. - Volume in cords by species group and class of material, South Carolina, 1936

The largest cordwood volume, 74.6 million cords, was in the northern coastal plain. About 47.1 million cords were in the southern coastal plain and 36.5 million in the piedmont. About 38 percent of the cordwood volume in the northern coastal plain was pine, as was 42 percent in the southern coastal plain and 56 percent in the piedmont.

NET GROWTH OF TIMBER, 1936-1943

The estimated growth is based upon an analysis of increment cores from 22,000 sample trees located on the inventory plots of 1936. Net growth is the quantity of wood produced by the forest growing stock, deducting the volume lost through mortality but not that removed by cutting. Fires, insects, disease, wind, logging damage, and tree competition are the usual causes of tree mortality. During the 8-year period these factors resulted in a loss of 2.4 billion board feet from the saw-timber stand, or 12 million cords from the entire growing stock. Another factor resulting in heavy mortality during the period was the impounded water of the Santee-Cooper Power and Navigation Project. Although 228 million board feet of sawlogs was salvaged prior to flooding the reservoirs, an additional 94 million feet was destroyed by the backwater. The total volume lost was about 768 thousand cords. Forest land removed from future production amounted to about 121,000 acres.

Growth in Board Feet

Net growth for the eight years amounted to 11.4 billion board feet, or the equivalent of an average annual growth of 1.4 billion feet. As shown in table 2, the annual net growth of saw timber, particularly in pine, increased through 1940. Contributing to this increased growth were surpluses of growth over drain, which by the end of 1939 had added 696 million board feet or 2 million cords to the pine growing stock. Significant in the decline of growth after 1940 were the reductions in both the saw-timber and total growing stock as a result of war drain. In the three years, 1941 to 1943, the saw-timber growing stock suffered a reduction of about 1 billion board feet, and the total stand lost 2.1 million cords.

Table 2. - Net growth of timber in South Carolina, 1936-1943

Year	Saw timber[1]			All sound trees- 5.0" d.b.h. and larger		
	Pine	Hardwood[2]	Total	Pine	Hardwood[2]	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords
1936	975	405	1,380	3,215	1,844	5,059
1937	1,040	403	1,443	3,363	1,871	5,234
1938	1,049	404	1,453	3,340	1,841	5,181
1939	1,052	403	1,455	3,349	1,853	5,202
1940	1,053	402	1,455	3,344	1,852	5,196
1941	1,047	401	1,448	3,321	1,853	5,174
1942	1,021	318	1,339	3,157	1,205	4,362
1943	1,029	399	1,428	3,263	1,868	5,131
Avg.	1,033	392	1,425	3,294	1,773	5,067

1/Measured by International $\frac{1}{4}$-inch rule.
2/Includes cypress.

The principal reason for the great decline in net growth in 1942, as compared with other war years, is that the entire mortality loss resulting from the Santee-Cooper Project was charged to that year.

Growth in Cords

Net growth from the sound-tree growing stock, 5 inches d.b.h. and over, totaled 40.5 million cords in the 8-year period. The influence of war drain and the mortality loss arising from the Santee-Cooper Project are also reflected in the net growth of the total stand. In the prewar period the average annual growth was 5.2 million cords as compared with 4.9 million in the war years. However, the full effect of war drain on net growth is not entirely revealed by this comparison. What has happened is that the increased cut was concentrated chiefly in the older trees of sawlog or near-sawlog size. This reduced the average age of the stand and, consequently, a greater proportion of the net growth now, as compared with prewar years, is on young trees having little or no commercial value because of their size.

FOREST DRAIN, 1936-1943

Forest drain consists of the volume of wood cut from the forest in the form of sound, live trees 5.0 inches d.b.h. and larger. Volume removed in the form of dead timber, sound or rotten cull trees, or the tops of hardwood is not included in the drain computations.

Following the inventory of forest land, annual investigations were made to determine the amount of forest drain. This involved obtaining consumption or production data from primary wood-using industries, such as sawmills, veneer plants, pulp mills, cooperage plants, shingle mills, small dimension manufacturers, shuttle block plants, and handle producers. In addition, contacts were made with producers of primary forest products such as hewn ties, poles and piling. Special investigations were made to determine fuelwood production for domestic as well as industrial uses. Data were collected as to the amount of wood removed for miscellaneous farm uses such as: fence posts, stakes for various crops, logs for tobacco barns and other buildings, wood for the repair of implements and vehicles, and many other uses. Consumers of wood located outside of South Carolina, but drawing at least part of their requirements from the State, were also contacted.

Drain for All Products

During the period 1936 to 1943, inclusive, a total of 11.8 billion board feet of saw timber was cut for all uses (table 3). The heaviest cut was in pine, which comprised 70 percent of the saw timber removed. The total volume cut (trees 5.0 inches d.b.h. and larger) during the same period amounted to 38.5 million cords, also about 70 percent pine.

Table 3. - Timber cut for all products in South Carolina, 1936-1943

Year	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pine	Hardwood[1/]	Total	Pine	Hardwood[1/]	Total
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
1936	839,600	403,600	1,243,200	2,684,700	1,315,500	4,000,200
1937	858,800	428,100	1,286,900	2,853,500	1,456,500	4,310,000
1938	773,400	400,400	1,173,800	2,591,500	1,382,700	3,974,200
1939	947,900	399,600	1,347,500	3,123,700	1,401,100	4,524,800
1940	1,039,800	458,000	1,497,800	3,372,600	1,554,700	4,927,300
1941	1,245,500	533,300	1,778,800	3,922,900	1,718,900	5,641,800
1942	1,314,300	474,600	1,788,900	4,109,400	1,553,900	5,663,300
1943	1,278,900	413,300	1,692,200	4,044,600	1,403,000	5,447,600

1/Includes cypress.

The demand for wood as a war material dates from the summer of 1940 when the Army began to buy lumber for training camps. Although Army purchases began in midyear, most of the material procured probably came from stocks on hand, which at that time were at a high level. The step-up in production to offset stock depletions and to take care of expanding Army purchases probably did not occur until late 1940 or early 1941. Consequently, for the purpose of analyzing drain as affected by war demands, 1941 is assumed to be the beginning of the war period. Saw-timber drain during the years 1941 through 1943 averaged 1.8 billion board feet annually, or 34 percent above the 1.3 billion average annual cut during the prewar years 1936 to 1940. The increase in total drain (trees 5.0 inches d.b.h. and larger) was not as marked, but even so was 28 percent more than in the prewar period.

Before drain increased as a result of war demands, the heaviest cut occurred in 1940 when 4.9 million cords of wood were harvested. Of the three years of war production, the heaviest cutting was in 1942 when about 5.7 million cords were removed from the growing stock. Drain in 1943 was about 4 percent less. The drop in that year was principally due to labor and equipment shortages. These difficulties will probably keep drain below that of 1942 for the duration in spite of the continued great demand for wood as a war material.

As an item of drain, pine pulpwood showed the most spectacular increase. In 1936, only 1 percent of the pine went into pulpwood, by 1943 nearly one-fourth of the annual cut went for this product (table 4). In order of importance lumber, fuelwood, pulpwood, and veneer were the principal items of drain, together comprising 94 percent of the total in 1943.

Table 4. - Distribution of forest drain in South Carolina by commodities, 1936 as compared to 1943

Commodity	Pine		Hardwood[1/]		All species	
	1936	1943	1936	1943	1936	1943
	Percent	Percent	Percent	Percent	Percent	Percent
Lumber	58.6	51.1	31.7	31.0	49.7	45.9
Veneer	1.3	0.1	14.8	16.2	5.8	4.3
Cooperage	0.7	0.4	1.9	1.9	1.1	0.8
Pulpwood	1.3	23.2	1.0	2.8	1.2	17.9
Poles and piling	2.7	1.8	-	-	1.8	1.3
Crossties	1.6	1.3	3.2	1.6	2.1	1.4
Fuelwood	30.3	20.3	43.8	43.6	34.8	26.3
Other manufactures	0.3	0.1	1.2	1.5	0.6	0.5
Misc. farm use	3.2	1.7	2.4	1.4	2.9	1.6
All commodities	100.0	100.0	100.0	100.0	100.0	100.0

1/Includes cypress.

Drain for Lumber

In South Carolina, the cut of saw timber for lumber is chiefly by small mills, whose annual production rate is less than 5 million board feet. In 1943 about 1,250 of these mills accounted for three-fourths of the lumber manufactured. Twenty-two mills, sawing from 5 million to about 30 million feet per year, produced the remainder of the lumber.

Census records reveal that the State's output of lumber, which prior to 1890 had not exceeded 0.2 billion board feet annually, reached its first peak in 1909 when about 0.9 billion feet were sawed. From that year through 1935 production averaged 0.7 billion board feet per year, reaching a high of 1.1 billion feet both in 1923 and 1929, and a low of 0.3 billion in 1934. As may be seen in table 5, the quantity of timber cut for sawlogs was less than the previously cited 26-year average in only one of the five years preceding 1941. In the three war years the average was about 1 billion feet, with 1943 slightly under that figure. Sawlog production during the remaining war period probably will not exceed the 1943 level.

Table 5. - Timber cut for sawlogs in South Carolina, 1936-1943

Year	Pine	Hardwood[1/]	Total	Change from 1936
	M bd. ft.	M bd. ft.	M bd. ft.	Percent
1936	601,400	185,900	787,300	-
1937	524,600	194,800	719,400	-9
1938	442,700	181,200	623,900	-21
1939	566,800	199,100	765,900	-3
1940	630,700	244,200	874,900	+11
1941	802,200	297,500	1,099,700	+40
1942	824,600	253,400	1,078,000	+37
1943	789,200	194,200	983,400	+25

1/Includes cypress.

Over most of the State, the saw-timber growing stock has not been depleted to the point where operable stumpage is no longer available. An outstanding exception concerns the largest mills (40,000 bd. ft. or greater daily capacity) of which there were 18 in 1936, and only 9 in 1943. As the remaining old-growth stands or extensive areas of sawlog-size second growth are depleted, most of these may be expected to shut down. In the case of the small mills, which form the backbone of production, few have ceased operating for lack of stumpage. On rare occasions, during the war period, reports of temporary closures were received. In most cases operations were resumed in a week or two. Many mill operators will agree, however, that suitable stumpage is becoming increasingly harder to find, that the average tree diameter is smaller, and that volume per average logging chance is decreasing steadily. Tracts containing 1 million or more board feet are scarce, and most activity is centered in stands of less than 500 thousand feet.

In pine the most acute shortage is in trees yielding large, dense, structural timbers. Competition is very keen among "bill" timber operators for such stumpage, and extremely high prices have been paid. One

sale of 50 longleaf pine trees brought $35 per thousand board feet, although most of the high-quality pine stumpage ranges from about $18 to $25. Average quality pine stumpage is obtainable at from $10 to $15 per thousand feet.

War production has made heavy inroads on the remaining supply of cypress saw timber. Although practically all items of cypress have been in great demand, lumber suitable for tank and boat stock has been most urgently needed. This has resulted in extremely heavy cutting in the best cypress stands, of which only a few remain.

Table 6. - Comparison of hardwood lumber production by species in South Carolina in 1936 and 1943

Species	Lumber production	
	1936	1943
	Percent	Percent
Ash	4.5	4.7
Cottonwood	1.8	1.5
Elm	0.2	1.2
Hickory	Negl.	0.8
Maple	5.1	4.6
Oak	9.8	19.6
Sweetgum	60.8	40.4
Sycamore	0.8	1.3
Tupelo & blackgum	14.2	19.2
Yellowpoplar	2.8	5.9
Others	Negl.	0.8
All species	100.0	100.0

There have been some significant changes in the distribution of the cut among hardwood species as a consequence of the war (table 6). The demand for low-grade lumber for dunnage, boxes, and crating for war materials largely accounted for the increase in the proportion of oak, blackgum, and yellow-poplar cut in 1943 as compared with 1936. Also contributing to the increased production of these items was willingness of many consumers, particularly the nonessential ones, to accept inferior species or grades in substitution for those made scarce by war demands. The reduction in the proportion of sweetgum cut is largely the result of a restriction in civilian furniture output. The net result of these production shifts has been to spread the drain more evenly over the hardwood growing stock, thus, at least partially checking the trend toward a future stand of low-value species.

Lumber production statistics over the past several decades show periods of peak manufacture followed by years of low activity. Chances are that the same trend will follow the current peak period, but not for some time to come. Federal restrictions have caused the bulk of war production to be channeled to essential war users. As a consequence, a tremendous demand for lumber has developed among civilian users. New homes and new business structures are needed. A high in farm construction may be expected; and long-delayed repairs in many urban as well as rural structures must soon be made. Damage to the saw-timber growing stock as a result of war demands for lumber may be aggravated further by the anticipated heavy, if not heavier, drain to meet postwar lumber requirements.

With the exception of a few large operators, there has been no sincere effort on the part of lumbermen toward improved cutting practices. Very little forest land is owned by the lumber industry. Therefore, most

of the cutting is on land owned by farmers or other private individuals. Stumpage transactions are usually on a lump-sum basis which involves the payment of an agreed amount for the standing timber. Consequently, this is an incentive for lumbermen to cut all of the merchantable volume. For all practical purposes, the result is a preponderance of clear-cutting operations, the tracts being cut down to a few suppressed "whips," crooked trees, and some advanced reproduction of pine or hardwood. Offsetting this, to a certain extent, is a growing tendency on the part of landowners to sell stumpage on a diameter-limit basis. In sales of saw timber this usually results in prohibiting the removal of trees less than 12 inches in stump diameter. Generally speaking, most areas cut over on a diameter-limit basis are in a better productive condition than the areas where no cutting restrictions were in effect. However, cutting to a low minimum diameter in many of the stands results in the removal of the larger dominant trees and the leaving of a residual stand comprised chiefly of defective or small, suppressed trees. Vigorous growth and seed production is hardly to be expected from such areas until considerable time has elapsed.

Of increasing importance is the service provided farmers and small landowners by the State Commission of Forestry. For a small fee timber stands are marked for selective cutting by foresters. During the year ending June 30, 1944, about 25.5 million board feet and 1,600 cords were marked. A substantial contribution toward better forest practices on private lands is also being made through the efforts of the Extension Service, U. S. Forest Service, and other public agencies working within the State.

Drain for Pulpwood

In South Carolina, previous to 1937, there had been only one small pulp mill--the Carolina Fibre Company mill at Hartsville. This produced corrugated board and wrapping paper from blackgum. Mills in adjoining states drew but lightly on South Carolina for their wood supplies.

All this was changed in 1937 by the completion of two new paper mills--the West Virginia Pulp and Paper Company mill at Charleston, and the Southern Kraft mill at Georgetown--with a combined daily capacity of 1,015 tons of sulfate pulp and 950 tons of Kraft paper, representing an annual wood requirement of 575,000 cords of pine. Near capacity output was attained by these mills in 1939. To meet increased demands as a result of the war, additional units were added to these mills, and in 1942 their combined capacity was almost 2,000 tons of sulfate pulp per 24 hours.

The pattern of expansion in the State's pulp and paper industry is well reflected in the statistics of pulpwood drain (table 7). In 1936, only 49,000 cords were removed. In 1937 the drain jumped to 394,000 cords, and in 1939 was 551,000 cords. In the war years 1941 through 1943 the annual cut of pulpwood averaged 906,000 cords--about 19 times greater than in 1936 when only the Hartsville plant was in operation.

Not all of the pulpwood was consumed by South Carolina plants. In 1943, for example, six out-of-state plants obtained part of their wood from

Table 7. - Timber cut for pulpwood in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	Cords	Cords	Cords	Cords	Percent
1936	17,000	8,200	23,400	48,600	---
1937	252,700	90,000	51,000	393,700	+710
1938	258,300	87,800	38,200	384,300	+691
1939	370,600	121,400	58,600	550,600	+1,033
1940	413,400	159,700	97,200	670,300	+1,279
1941	408,200	279,000	110,700	797,900	+1,542
1942	483,100	335,100	127,900	946,100	+1,847
1943	340,200	286,400	348,200	974,800	+1,906

South Carolina. One was a Georgia plant, two were located in North Carolina, two in Virginia, and one in Tennessee. The combined drain by these plants in 1943 equaled 250 thousand cords, of which 27 thousand were hardwood and the remainder pine. In other words, one-fourth of the pulpwood cut from the forest growing stock in South Carolina went to supply plants in neighboring states.

In the 8-year period, 1936-1943, pulpwood drain totaled 4.8 million cords from the three regions of the State as follows: northern coastal plain, 53 percent; southern coastal plain, 29 percent; and piedmont, 18 percent. In six of the years, the cut was heaviest in the northern coastal plain, ranging from a low of 17 thousand cords in 1936 to a peak of 483 thousand cords in 1942. This was also a peak year in the southern coastal plain. In 1943, however, the heaviest cut was in the piedmont, amounting to 348 thousand cords.

Table 8. - Timber cut for pulpwood by major species groups in South Carolina, 1936-1943

Year	Pine	Hardwood	
	Cords	Cords	Percent
1936	35,800	12,800	26
1937	364,400	29,300	7
1938	362,700	21,600	6
1939	533,600	17,000	3
1940	602,800	67,500	10
1941	727,000	70,900	9
1942	891,900	54,200	6
1943	936,000	38,800	4
All years	4,454,200	312,100	7

For the entire period the volume of hardwood removed as pulpwood amounted to only 7 percent of the total (table 8). In 1936, when only the Hartsville plant was in operation, one-fourth of the pulpwood cut was hardwood. Since that time the proportion has been much smaller and has not shown an increasing trend. This situation will probably continue as long as large volumes of the more accessible and easier logged pine are available. Yet as a means of relieving the strain on the pine growing stock, the 1936 inventory of 53.8 million cords of pulping hardwoods should not be overlooked.

Table 9. - Pulpwood cut by tree-diameter class at 57 operations in South Carolina, 1943

Diameter class	Trees cut		Volume cut	
Inches	No.	Percent	Cu.ft.	Percent
6 to 8	2,248	47	15,000	20
10 to 12	2,141	44	41,900	56
14 to 18	413	9	17,800	23
20 & larger	5	Negl.	400	1
All classes	4,807	100	75,100	100

Data showing distribution of pulpwood drain by diameter class are not available for the 8-year period. In 1943, about 5 thousand tree measurements were obtained from 57 pulpwood operations in the State. Table 9 summarizes the findings, and indicates, among other things, that in 1943 about one-half the trees cut for pulpwood were less than sawlog size, but only one-fifth of the volume came from such trees.

In contrast to the lumber industry in general, the pulp and paper industry has made more progress in carrying out and promoting forestry practices in the State. As of 1943, pulp and paper company holdings in the State amounted to 512 thousand acres of forest land, largely as the result of the industry's recognition of the fact that it is to its advantage to have a large and permanent supply of pulpwood available within reasonable distance of the mills. Conservative cutting practices have been followed on these lands even though such is not the case on much of the other private forest land cut over by pulpwood contractors, particularly during the war. However, in 1943, there was a total of 18 technical foresters in the employ of pulp companies, or their contractors, as compared with only two working for lumber companies. The primary function of these foresters is the management of company holdings and to help timberland owners in marking their timber for cutting, or to conduct demonstration cuttings for the education of private landowners, and pulpwood contractors and sub-contractors.

Drain for Fuelwood

The total consumption of fuelwood in the State, in 1943, was estimated at 2.7 million cords. Fortunately for the growing stock, 1.3 million cords consisted of items such as mill waste (slabs, edgings, and trimmings), dead and cull trees, and the tops and limbs of hardwood. Nevertheless, the 1.4 million cords coming from the growing stock was second only to lumber as an item of drain.

There was no significant trend in the amount of fuelwood cut from the growing stock during the 8-year period (table 10). To a certain extent, variations in the amount cut can be attributed to fluctuations in the annual yield of flue-cured tobacco. This is particularly true of the northern coastal plain where almost one-fifth of the fuelwood drain is for tobacco curing. War-induced factors, such as population shifts, coal shortages, and scarcity of labor, have been taken into account, but none have caused a marked change in the yearly cut of fuelwood.

Table 10. - Timber cut for fuelwood in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	Cords	Cords	Cords	Cords	Percent
1936	586,500	145,600	659,300	1,391,400	-
1937	621,100	190,300	659,300	1,470,700	+6
1938	618,300	190,300	659,300	1,467,900	+5
1939	709,600	189,100	683,000	1,581,700	+14
1940	665,400	189,100	686,000	1,540,500	+11
1941	665,400	189,100	686,000	1,540,500	+11
1942	625,600	173,800	632,100	1,431,500	+3
1943	625,600	173,800	632,100	1,431,500	+3

There is considerable room for improvement in the cutting practices followed in harvesting fuelwood. Wood dealers, in many instances, clear-cut without discriminating between high and low value trees. Much the same is true of farmers, who are the major consumers as well as harvesters of fuelwood. All too many present and potential saw-timber trees end up in a stove or fireplace, primarily as a result of the farmers' lack of interest in or knowledge of timber values.

Drain for Veneer

In the eight years, 1936 through 1943, slightly over three-fourths billion board feet of timber have been cut for veneer. Seventy-one percent of the volume removed was from the northern coastal plain, 24 percent from the southern coastal plain, and the remainder from the piedmont. Practically all of the material came from the bottom-land hardwood type and from the old-growth forest therein. Veneer logging is largely concentrated on the gum species. In 1943, for example, about 60 percent of the volume cut was sweetgum and 30 percent blackgum and tupelo. The remaining 10 percent consisted mainly of yellowpoplar, cottonwood, and sycamore.

There are 37 veneer plants located within the State. Nine of these plants are normally engaged in the manufacture of container veneer, and 28 produced various sizes and grades of commercial veneer, a large part of which is utilized by the furniture industry located in South Carolina and nearby states. Only a small part of the log supply required by these plants is shipped in from other states. For example, in 1943 only 4.7 million board feet were imported, while 79.0 million feet were obtained and used locally. Furthermore, 11.9 million feet of logs were shipped elsewhere, mainly to veneer plants associated with the furniture industry in North Carolina.

The increase in volume of veneer drain, as a result of war, has not been startling; the net effect has been to raise the average level of drain to about that of 1936 (table 11). Veneer production for furniture decreased during the war, but was offset by the demand for container and aircraft veneers. This latter class of veneer required logs of highest quality

which ordinarily were processed into the best grades of furniture veneer. However, there is no evidence that the drain on the best veneer timber increased as a result of the war. Furthermore, the increased demand for container veneer probably resulted in the utilization of lower grade material in amounts greater than normally used, although on many operations the indiscriminate use of high-grade logs for container veneer continued.

Table 11. - Timber cut for veneer in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	M bd.ft.	M bd.ft.	M bd.ft.	M bd.ft.	Percent
1936	81,900	17,800	-	99,700	-
1937	83,900	24,000	4,900	112,800	+13
1938	73,300	21,700	3,700	98,700	-1
1939	56,200	22,200	5,400	83,800	-16
1940	60,400	21,000	6,100	87,500	-12
1941	71,300	24,700	7,100	103,100	+3
1942	64,100	26,700	5,800	96,600	-3
1943	63,900	30,600	5,900	100,400	+1

Logging for veneer logs is quite similar to the general run of hardwood logging operations in the State. Logs of high quality are generally obtained in conjunction with hardwood saw-timber operations in old-growth bottom-land hardwoods. Container veneer plants and many of the commercial veneer producers purchase tracts of hardwood timber and log them off about as clean as the lumbermen do. Some plants depend, at least in part, on veneer bolts cut and delivered by farmers. In general, regardless of the source of logs, small attention is given to conservative cutting practices, or to the management of timber tracts with the objective of continuous production of quality veneer species.

TREND IN SUPPLY OF TIMBER

Eight years of cutting have brought about some changes in the growing stock. From the standpoint of total volume, however, the change has been slight. The quantity of saw timber was reduced from 30.1 billion to 29.7 billion board feet, or only 1.4 percent less than the 1936 volume. On the other hand, the total growing stock (5 inches d.b.h. and larger) increased from 124 million[1/] to 126 million cords, representing a slight gain of 1.7 percent in total volume. This was due entirely to an increase in the total hardwood growing stock, which amounted to 5.6 percent more than in 1936. The total volume of pine decreased only 0.5 percent, but the cypress growing stock lost 14.8 percent of its 1936 volume (table 12).

Trend in Total Supply of Pine

The effect of growth and drain upon the pine growing stock is shown in figure 6. In this illustration drain is expressed as a percentage above or below net growth. In the case of saw timber, the curve shows that drain was less than growth during the five years preceding the war and, as a result, the volume of saw timber increased about 4 percent. However, in the following three war years, drain exceeded growth in an amount sufficient to wipe out this gain and to lower the volume of growing stock 0.5 percent below the 1936 level. This serves to emphasize the fact that the attainment of a substantial increase in volume of growing stock is often a slow process, and that gains made over a long period may be wiped out in a few years of heavy cutting.

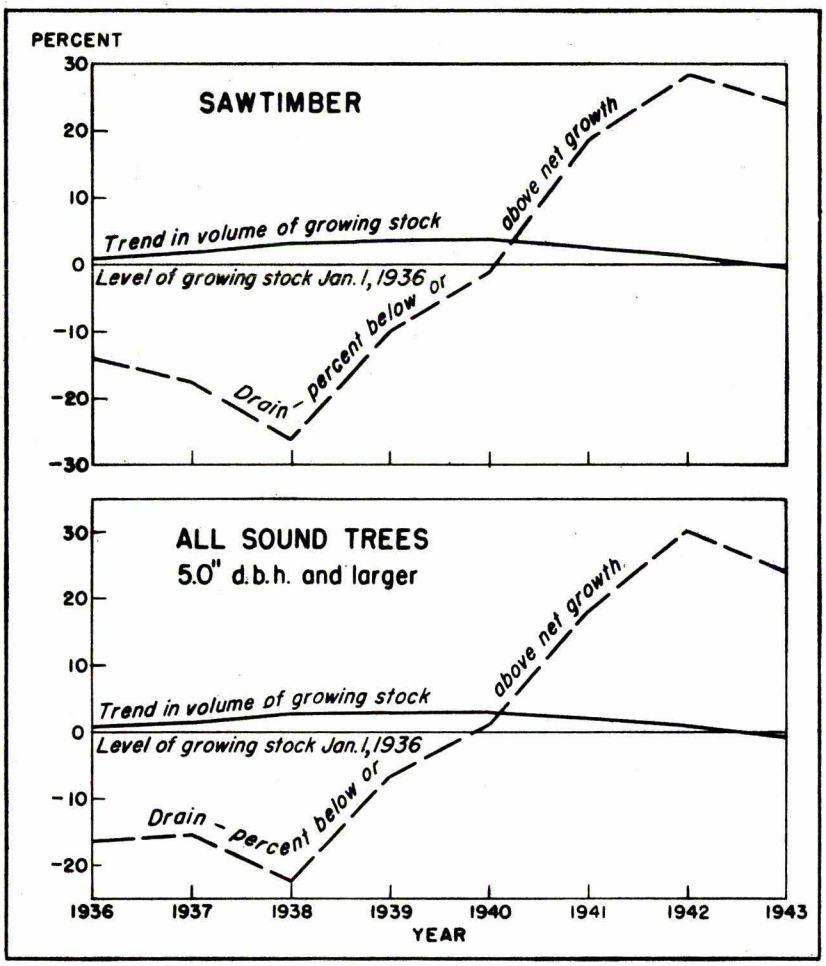

Figure 6. - The effect of growth and drain upon the pine growing stock in South Carolina, 1936-1943.

1/ The volume of 158 million cords given on page 3 includes the sound volume in cull trees and hardwood tops while the above does not.

Table 12. - Change in volume of forest growing stock in South Carolina, 1936-1943

(Saw timber)

Item	Pine	Cypress	Hardwood	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	18,431	1,381	10,305	30,117
Change in growing stock:				
1936	+135	-14	+15	+136
1937	+181	-21	-4	+156
1938	+276	-23	+27	+280
1939	+104	-39	+43	+108
1940	+13	-37	-18	-42
1941	-199	-57	-75	-331
1942	-293	-48	-109	-450
1943	-250	-27	+13	-264
Growing stock, Jan. 1, 1944	18,398	1,115	10,197	29,710
Net change	-33	-266	-108	-407
	Percent	Percent	Percent	Percent
	-0.2	-19.3	-1.0	-1.4

(All sound trees, 5.0 inches d.b.h. and larger)

	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	66,206	4,172	53,574	123,952
Change in growing stock:				
1936	+531	-34	+562	+1,059
1937	+510	-47	+461	+924
1938	+748	-54	+513	+1,207
1939	+225	-84	+536	+677
1940	-29	-81	+379	+269
1941	-602	-122	+256	-468
1942	-952	-135	-214	-1,301
1943	-782	-59	+524	-317
Growing stock, Jan. 1, 1944	65,855	3,556	56,591	126,002
Net change	-351	-616	+3,017	+2,050
	Percent	Percent	Percent	Percent
	-0.5	-14.8	+5.6	+1.7

The outlook for early gains in the volume of pine is not promising. Although three years of war have brought the volume of growing stock down to a point only slightly below 1936, it is expected that the downward trend will continue. This trend will probably last for the duration of the war and during the anticipated boom period afterwards. How long this will be in terms of years is anyone's guess. It is certain, however, that repairs to the growing stock will require limiting the annual cut to less than net growth. The rate and extent of the growing stock's restoration will depend, of course, on the amount of damage resulting from the extended period of heavy drain, and on how much and how long the cut is held below net growth.

Trend in Total Supply of Hardwood

Drain exceeded the growth of hardwood saw timber in all but three of the eight years, and in those years (1936, 1938, and 1939) the surplus growth over drain was very small (figure 7). The consequent loss in volume of growing stock was slight during the prewar years, but the downward trend gained momentum as drain increased during the war. At the end of 1943, the volume of hardwood saw timber was about 1 percent less than in 1936. About two-thirds of the loss in saw-timber volume was due to the heavy cutting of cypress. The cut of this species exceeded growth in each of the eight years, and by the end of 1943 its saw-timber volume was about one-fifth less than the amount standing in 1936. Obviously, from a commercial standpoint, the cypress is a vanishing species.

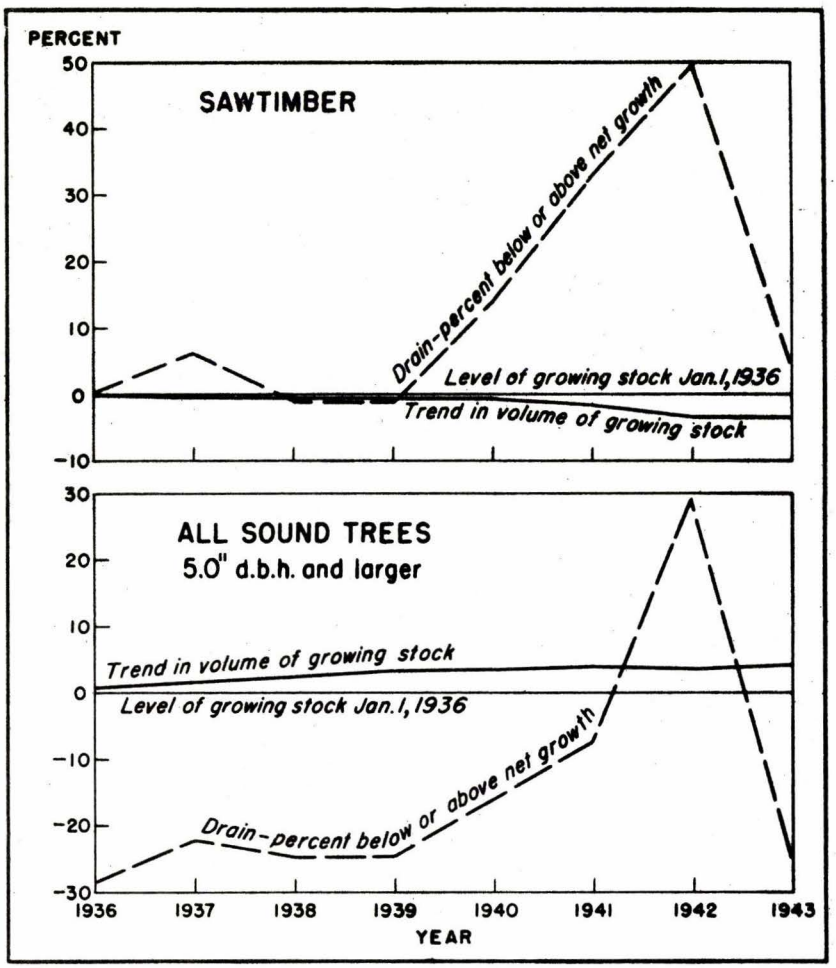

Figure 7. - The effect of growth and drain upon the hardwood growing stock in South Carolina, 1936-1943.

In direct contrast to the situation prevailing in

the saw timber, the drain from the entire hardwood growing stock exceeded net growth in only one out of eight years. During the prewar years the total hardwood growing stock increased at a rate of about 1 percent annually. Since the beginning of the war, its volume has remained at about the same level, 4 percent above that of 1936. Nevertheless, a gain in total growing stock accompanied by a loss in saw-timber volume means only one thing--that the trend in the hardwoods is definitely toward a stand of immature trees.

Trend in Timber Supply by Regions

Northern coastal plain: From 1936 through 1943 the equivalent of 18.7 million cords of wood were removed from the sound-tree growing stock of this area. This means that about one-half of the total amount of sound, live timber cut within the State in those eight years came from the northern coastal plain. Almost one-half of the sawlogs and hewn ties, over one-half of the pulpwood, poles and piling, and over two-thirds of the veneer logs and cooperage bolts were derived from forests of this unit. In fact, of the major items of forest drain only two (fuelwood and miscellaneous farm uses) were produced in greater amounts elsewhere.

This concentration of cutting activity is easily understood, as almost one-half of the State's saw-timber volume and acreage, according to the 1936 inventory, was in the northern coastal plain. In spite of this apparent abundance of timber, the impact of heavy cutting on the growing stock was most severe in this unit. Only in this area did the hardwood growing stock suffer a loss in volume, amounting to 12 percent in the saw timber and 6 percent in the total stand (table 14). Although the 2 percent loss in volume of pine saw timber was exceeded somewhat in the southern coastal plain, the 8 percent drop in total pine volume was not surpassed anywhere in the State (table 13).

Contributing heavily to the loss in hardwood was the excessive mortality within the bottom-land hardwood types inundated by the Santee-Cooper Project. In addition, over two-thirds of the hardwood lumber produced in the State came from the area. No doubt the salvage operations arising from the Santee-Cooper Project has some effect on this, but the State's hardwood industry has normally depended on this area as its chief source of supply. With the flooding of the Lake Moultrie and Lake Marion reservoirs the rate of cutting on other areas of bottom-land hardwood, such as the Pee Dee River and Black River bottoms, has increased, and in the future the hardwood volume may decline even faster than in the eight years under discussion. This is particularly true if other reservoir structures, some of which are already planned, further reduce the area of productive hardwood forest.

A fact not revealed in the over-all analysis of changes in growing stock is that the best species of hardwood have been much more heavily overcut than less commercially desirable ones. The volume losses in species such as sweetgum, soft maple, yellowpoplar, and ash were undoubtedly much larger than indicated by the computed average loss. In contrast, other species, such as the low-quality, worm-infested oaks, have increased

Table 13. - Change in volume of pine growing stock by regions in South Carolina, 1936-1943

(Saw timber)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	5,817	8,471	4,143
Change in growing stock:			
1936	-12	+53	+94
1937	+27	+26	+128
1938	+49	+81	+146
1939	+16	+12	+76
1940	-14	-9	+36
1941	-100	-107	+8
1942	-129	-165	+1
1943	-105	-91	-54
Growing stock, Jan. 1, 1944	5,549	8,271	4,578
Net change	-268	-200	+435
	Percent	Percent	Percent
	-4.6	-2.4	+10.5

(All sound trees - 5.0 inches d.b.h. and larger)

	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	19,534	27,641	19,031
Change in growing stock:			
1936	-27	+76	+482
1937	+69	-115	+556
1938	+133	+17	+598
1939	+51	-215	+389
1940	-31	-272	+274
1941	-269	-531	+198
1942	-355	-789	+192
1943	-282	-484	-16
Growing stock, Jan. 1, 1944	18,823	25,328	21,704
Net change	-711	-2,313	+2,673
	Percent	Percent	Percent
	-3.6	-8.4	+14.0

Table 14. - Change in volume of hardwood growing stock by regions in South Carolina, 1936-1943 1/

(Saw timber)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	3,664	6,330	1,692
Change in growing stock:			
1936	-2	-32	+35
1937	+18	-69	+26
1938	+36	-61	+29
1939	+25	-49	+28
1940	+29	-97	+13
1941	+37	-169	-
1942	+29	-195	+9
1943	+31	-60	+15
Growing stock, Jan. 1, 1944	3,867	5,598	1,847
Net change	+203	-732	+155
	Percent	Percent	Percent
	+5.5	-11.6	+9.2

(All sound trees - 5.0 inches d.b.h. and larger)

	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	19,551	28,200	9,995
Change in growing stock:			
1936	+253	+43	+232
1937	+297	-80	+197
1938	+339	-70	+190
1939	+326	-71	+197
1940	+334	-156	+120
1941	+356	-327	+105
1942	+347	-844	+148
1943	+353	-68	+180
Growing stock, Jan. 1, 1944	22,156	26,627	11,364
Net change	+2,605	-1,573	+1,369
	Percent	Percent	Percent
	+13.3	-5.6	+13.7

1/Includes cypress.

in volume throughout the 8-year period; thus, stand quality as well as volume has deteriorated.

This unit contains an extensive acreage of paper company, estate, game club, plantation, and other holdings, upon which forest drain at its heaviest may not exceed growth. Furthermore, there are about 245 thousand acres of national forest land upon which conservative cutting practices are followed. Paper company holdings amount to about 250 thousand acres. The total area of forest land in game club and similar holdings is not known, but in Georgetown County alone there are about 100 thousand acres of such land. Thus, it is seen that a significant part of the 4.5 million acres of forest land in the area is being carefully managed. Yet the entire growing stock--hardwood and softwood, saw timber and cordwood--is being overcut. This means that forest lands outside the national forests, paper company tracts, etc., are being exploited at a much heavier rate than over-all comparisons of growth and drain reveal. Much of this abused forest land belongs to farmers, and in counties where farm ownership predominates, these lands often are without sufficient merchantable volume to meet local needs. In this respect the situation appears most serious in Sumter, Lee, and Darlington Counties, although tight situations exist in other counties located in the central and western portions of this unit.

The loss in total pine growing stock, which was proportionately greater than the loss of saw-timber volume, is attributed mainly to the heavy cut of pulpwood. Since 1937 the area has furnished over 250 thousand cords per year, and in 1942 produced almost 500 thousand cords. This is a substantial jump from a 17-thousand cord production in 1936. Deficits in the total growing stock began in 1937 in spite of no great increase in lumber production in that year and in following years through 1941. Heavy cutting of under-sawlog-size material, such as pulpwood, is reflected in the years 1937 and 1939, when the total growing stock decreased and the saw-timber volume increased.

Southern coastal plain: Of the total amount of timber cut during the 8-year period, 22 percent, or 8.5 million cords, came from the southern coastal plain. About 53 percent of the material removed from the area was in the form of sawlogs, 17 percent was fuelwood, 16 percent pulpwood, and 5 percent veneer logs--these four items adding up to 91 percent of the total. The balance of the drain was principally for hewn ties and poles and piling.

In the case of pine, drain exceeded growth in five of the eight years, and the net effect was a fairly substantial loss in volume of growing stock, amounting to 5 percent of the saw timber, and 4 percent of the total stand (table 13). The main cause of the deficit in pine volume was in the quantity of timber removed as sawlogs and pulpwood, amounting to 58 and 22 percent, respectively, of the total pine drain for the period. In contrast to the situation in the pine, the hardwood volume substantially increased, involving a 6-percent gain in saw timber and a 13-percent addition to the total growing stock (table 14). A chief reason for the increase in hardwood seems to be in the small amount cut as fuelwood in this area. In eight years, only 0.7 million cords have been cut as compared with more than 2 million in each of the other units. Unfortunately, an increase in

volume of hardwood growing stock in the sand hill section of the coastal plain is usually indicative of a loss in pine growing stock and its replacement by decidedly inferior species--the longleaf pine being replaced by scrub oak. However, in other sections of the southern coastal plain a gain in hardwood volume is not always disadvantageous as much of the increase involves desirable bottom-land hardwood timber.

A disturbing factor in an analysis of growth and drain in this area is the large acreage of forest which may never be cut or only lightly so. This includes land controlled by game clubs, private estates, and "yankee" plantation owners. In addition, there are fairly extensive paper company holdings within which conservative cutting practices prevail. All this puts a heavy strain on the growing stock of the remaining area, and results in serious forest depletion in certain localities.

Piedmont: A total of 11.3 million cords of wood were removed from the piedmont's forest growing stock during the period 1936 through 1943. Forty-seven percent of the volume cut was fuelwood, 40 percent sawlogs, 7 percent pulpwood, and 6 percent all other products (principally ties and miscellaneous items used on farms).

Because of an extensive area of young stands and the absence of widespread and heavy cutting during most of the period, a fairly substantial increase in the volume of growing stock has taken place. As of January 1, 1944, there were 4.6 billion board feet of pine and 1.8 billion of hardwood, representing an increase of about 10 percent in each species group. In total growing stock each major species group gained about 14 percent, with pine volume estimated at 21.7 million cords and hardwood at 11.4 million as of January 1, 1944.

In spite of the above indicated gain in growing stock, the recent great increase in pulpwood drain in the piedmont is disturbing. The 348 thousand cords of pulpwood cut in 1943 represented a 100-percent increase in the annual volume of wood cut for this purpose, and was the primary reason for the loss in pine growing stock that year. Furthermore, it should be remembered that the original forest in the piedmont was of mixed hardwood, chiefly oak and hickory, and some shortleaf pine. In the course of land settlement the hardwood forest gave way to cultivated fields. Poor cropping practices on the highly erosive soils resulted in much land abandonment. The idle fields furnished an ideal seed bed for the light-seeded pine, and soon were covered with these species. Hardwoods also came in later, and are prevalent in the understory. Thus, when the old-field pine stands of the piedmont are cut heavily, the succeeding stand is often predominately hardwood of low commercial value.

Another disturbing feature of the pulpwood operations in the piedmont is the apparent concentration of cutting activity in certain areas. Fairfield County is an example. In 1943 as many as six plants were drawing wood from this county. Indicative of the overcutting is information obtained from four of these plants, which revealed a drain of 117 thousand cords in that year, or 34 percent of the piedmont's total pulpwood cut. This is way out of proportion to the amount of sound-tree growing stock in

Fairfield, estimated at 9 percent of the volume in the piedmont. Newberry County also was heavily overcut. A partial tabulation of pulpwood volume removed showed a cut of over 62 thousand cords (18 percent of the piedmont's total) from a county containing only 6 percent of the growing stock.

CONCLUSIONS

As of January 1, 1944, the volume of sound, live trees growing within the forests of South Carolina totaled 29.7 billion board feet, or 126 million cords. Since January 1, 1936, this represents a loss of 1.4 percent in the quantity of saw timber, but a gain of 1.7 percent in the volume of all sound trees. Therefore, on the strength of these data it appears that the State's total forest inventory has suffered only slight changes in eight years, even though the amount of timber cut in three of these years was presumably large because of war demands.

However, a more detailed analysis reveals that the general situation is not as rosy as it seems. Under present rates of cutting, cypress will rapidly lose its status as a commercially important species. In eight years the volume of cypress saw timber has been reduced by about one-fifth, and there is insufficient second growth to provide a valuable stand in the future. Another fact worthy of serious consideration is that only under-sawlog-size hardwood substantially increased in volume during the 8-year period. This means that there is a definite trend toward a stand of young hardwood which, under present standards of utilization, would have little commercial value because of size.

Not to be overlooked are conditions within survey units. In the northern coastal plain the volume of hardwood saw timber, including cypress, was reduced 12 percent in the eight years. Even more serious was the fact that better species, like sweetgum and cypress, were cut heavier than the over-all figure reveals, while less desirable species, such as blackgum and certain oaks, may have actually increased in volume. Also, in the northern coastal plain the under-sawlog pine was being overcut at a faster rate than the saw timber. Thus, a serious future shortage of pine saw timber was in the making in that area. In the piedmont, the continued heavy cutting of pulpwood, such as occurred in two counties in 1943, will hasten conversion to a forest of low-quality hardwood in such areas.

The piedmont is the only area in which a definite improvement in the pine growing stock has taken place during the eight years, 1936 through 1943. However, in 1943 an increase in pulpwood drain, amounting to 220 thousand cords over 1942, brought about a reduction in pine growing stock, whereas substantial increases were effected in the previous seven years. This leads up to the point that major fluctuations in drain are chiefly due to changes in the amount of saw timber and pulpwood cut. The volume of fuelwood harvested each year ordinarily varies but little, and other items of drain are too small to be of great influence on the total growing stock. Obviously, any program designed to improve the quantity and quality of the growing stock greatly depends on participation by the lumber and pulpwood industries.

The 1936 forest inventory revealed that the average acre of saw timber in South Carolina contained 4,680 board feet, and in comparison with similar volumes in the other 12 southern states was the best stand in the South. As of July 1, 1944, it is estimated 37 thousand persons were employed in the woods and plant operations of the primary wood-using industries. Even excluding the small portable sawmills the volume of forest products manufactured in the State ranks second only to textiles. Consequently, it is unbelievable that the people as well as the forest industries of South Carolina can remain complacent on matters concerning the conditions of their forest resource. Even with the best average stand per acre of the South, over one-fourth of the saw-timber area was stocked with less than 2 thousand board feet per acre--an amount usually considered too small to operate economically. Furthermore, the trend is definitely toward more of such areas and a gradual conversion to immature stands of hardwood. Common sense tells that such trends do not result in stable employment and permanent forest industries and, consequently, are contrary to the welfare of South Carolina.

APPENDIX

Definition of Terms

Pine: Loblolly, longleaf, pitch, pond, shortleaf, slash, Virginia, and eastern white pines. Also eastern hemlock, eastern redcedar, and Atlantic white cedar.

Hardwood: Black, swamp and water tupelos, sweetgum, yellowpoplar, oaks, ash, maple, elm, hickory, cottonwood, sycamore, and associated minor species.

Cypress: Bald cypress (southern cypress) and pond cypress.

Pine types: Stands in which pine forms at least 25 percent of the dominant or codominant trees. Thus, the type ranges from pure pine stands to those in which up to 75 percent of the dominant and codominant trees are hardwood.

Hardwood types: Stands in which hardwood, cypress, or mixed hardwood and cypress form at least 75 percent of the dominant and codominant trees.

Saw-timber trees: Pine or cypress trees 9.0 inches or more in diameter, or hardwood trees 13.0 inches or more, with not less than one sound 12-foot butt log, or with 50 percent of the gross board-foot volume of the tree in usable sawlogs.

All sound trees: All saw-timber trees as described above and all sound, straight-stemmed trees from 5.0 inches d.b.h. to saw-timber size.

Board-foot volume: The volume by International $\frac{1}{4}$-inch rule, exclusive of defect, of that portion of sound saw-timber trees lying between stump and the upper limit of merchantability for sawlogs.

Volume in cords: The volume of wood and bark in standard cords, exclusive of defect, of that portion of trees 5.0 inches and larger in diameter lying between stump and a top of approximately 4 inches minimum diameter outside bark.

Growing stock: The volume of timber exclusive of cull trees and hardwood tops.

Mortality: The volume lost from the growing stock through the death of trees from causes such as fire, tree competition, disease, insect damage, and windthrow.

Net growth: The net increase (mortality deducted) in growing stock, before subtracting forest drain.

Forest drain: The reduction in growing stock due to cutting within the designated area.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1936

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	151,000	77,100	228,100	382,600	167,700	550,300
Veneer	1,500	16,300	17,800	3,400	34,000	37,400
Cooperage	5,700	400	6,100	12,700	900	13,600
Pulpwood	1,900	-	1,900	8,200	-	8,200
Other manufactures	200	2,600	2,800	500	9,600	10,100
Hewn crossties	6,800	4,100	10,900	20,600	9,100	29,700
Poles and piles	6,900	-	6,900	17,800	-	17,800
Fuelwood	26,300	28,000	54,300	83,600	62,000	145,600
Miscellaneous farm use	3,400	1,100	4,500	18,900	11,100	30,000
Total	203,700	129,600	333,300	548,300	294,400	842,700
Northern Coastal Plain:						
Lumber	303,100	103,300	406,400	753,900	235,300	989,200
Veneer	12,800	69,100	81,900	31,800	160,900	192,700
Cooperage	2,500	10,100	12,600	6,200	23,500	29,700
Pulpwood	400	900	1,300	7,300	9,700	17,000
Other manufactures	2,600	2,600	5,200	6,600	5,300	11,900
Hewn crossties	7,600	7,900	15,500	19,000	18,000	37,000
Poles and piles	16,800	-	16,800	41,700	-	41,700
Fuelwood	61,500	28,300	89,800	352,800	233,700	586,500
Miscellaneous farm use	3,900	1,100	5,000	29,800	9,000	38,800
Total	411,200	223,300	634,500	1,249,100	695,400	1,944,500
Piedmont:						
Lumber	147,300	5,500	152,800	435,800	14,100	449,900
Veneer	-	-	-	-	-	-
Cooperage	-	-	-	-	-	-
Pulpwood	3,200	100	3,300	20,300	3,100	23,400
Other manufactures	200	500	700	600	1,400	2,000
Hewn crossties	1,200	5,900	7,100	3,600	15,200	18,800
Poles and piles	4,300	-	4,300	12,800	-	12,800
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	224,700	50,700	275,400	887,300	325,700	1,213,000
State of South Carolina:						
Lumber	601,400	185,900	787,300	1,572,300	417,100	1,989,400
Veneer	14,300	85,400	99,700	35,200	194,900	230,100
Cooperage	8,200	10,500	18,700	18,900	24,400	43,300
Pulpwood	5,500	1,000	6,500	35,800	12,800	48,600
Other manufactures	3,000	5,700	8,700	7,700	16,300	24,000
Hewn crossties	15,600	17,900	33,500	43,200	42,300	85,500
Poles and piles	28,000	-	28,000	72,300	-	72,300
Fuelwood	151,700	93,600	245,300	814,600	576,800	1,391,400
Miscellaneous farm use	11,900	3,600	15,500	84,700	30,900	115,600
Total	839,600	403,600	1,243,200	2,684,700	1,315,500	4,000,200

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1937

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	147,800	61,300	209,100	367,700	132,100	499,800
Veneer	2,100	21,900	24,000	5,200	47,900	53,100
Cooperage	5,400	200	5,600	13,300	400	13,700
Pulpwood	21,100	-	21,100	90,000	-	90,000
Other manufactures	-	2,500	2,500	-	5,600	5,600
Hewn crossties	11,700	3,700	15,400	29,100	8,000	37,100
Poles and piles	14,400	-	14,400	36,200	-	36,200
Fuelwood	23,500	21,500	45,000	87,900	102,400	190,300
Miscellaneous farm use	2,400	700	3,100	16,900	5,100	22,000
Total	228,400	111,800	340,200	646,300	301,500	947,800
Northern Coastal Plain:						
Lumber	264,800	127,400	392,200	658,800	287,600	946,400
Veneer	9,100	74,800	83,900	22,700	173,800	196,500
Cooperage	1,800	12,000	13,800	4,500	28,100	32,600
Pulpwood	58,600	1,900	60,500	242,100	10,600	252,700
Other manufactures	3,200	4,900	8,100	7,900	10,300	18,200
Hewn crossties	18,000	6,900	24,900	44,700	15,700	60,400
Poles and piles	15,100	100	15,200	37,600	200	37,800
Fuelwood	64,800	27,300	92,100	365,100	256,000	621,100
Miscellaneous farm use	4,000	1,100	5,100	29,800	9,000	38,800
Total	439,400	256,400	695,800	1,413,200	791,300	2,204,500
Piedmont:						
Lumber	112,000	6,100	118,100	331,300	15,700	347,000
Veneer	-	4,900	4,900	-	12,600	12,600
Cooperage	-	2,600	2,600	-	6,700	6,700
Pulpwood	5,000	700	5,700	32,300	18,700	51,000
Other manufactures	300	700	1,000	800	2,100	2,900
Hewn crossties	1,400	6,200	7,600	4,000	16,000	20,000
Poles and piles	3,800	-	3,800	11,400	-	11,400
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	191,000	59,900	250,900	794,000	363,700	1,157,700
State of South Carolina:						
Lumber	524,600	194,800	719,400	1,357,800	435,400	1,793,200
Veneer	11,200	101,600	112,800	27,900	234,300	262,200
Cooperage	7,200	14,800	22,000	17,800	35,200	53,000
Pulpwood	84,700	2,600	87,300	364,400	29,300	393,700
Other manufactures	3,500	8,100	11,600	8,700	18,000	26,700
Hewn crossties	31,100	16,800	47,900	77,800	39,700	117,500
Poles and piles	33,300	100	33,400	85,200	200	85,400
Fuelwood	152,200	86,100	238,300	831,200	639,500	1,470,700
Miscellaneous farm use	11,000	3,200	14,200	82,700	24,900	107,600
Total	858,800	428,100	1,286,900	2,853,500	1,456,500	4,310,000

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1938

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	132,900	41,600	174,500	330,600	89,600	420,200
Veneer	1,600	20,100	21,700	3,900	44,100	48,000
Cooperage	4,700	200	4,900	11,800	400	12,200
Pulpwood	23,500	100	23,600	87,500	300	87,800
Other manufactures	-	3,500	3,500	-	7,700	7,700
Hewn crossties	11,200	7,600	18,800	27,800	16,500	44,300
Poles and piles	7,900	-	7,900	20,100	-	20,100
Fuelwood	23,500	21,500	45,000	87,900	102,400	190,300
Miscellaneous farm use	2,400	700	3,100	16,900	5,100	22,000
Total	207,700	95,300	303,000	586,500	266,100	852,600
Northern Coastal Plain:						
Lumber	208,500	131,600	340,100	518,500	295,200	813,700
Veneer	8,100	65,200	73,300	20,100	151,500	171,600
Cooperage	1,800	6,900	8,700	4,500	16,100	20,600
Pulpwood	72,000	1,500	73,500	250,500	7,800	258,300
Other manufactures	2,400	4,400	6,800	6,000	9,200	15,200
Hewn crossties	17,200	9,900	27,100	42,800	22,900	65,700
Poles and piles	8,500	200	8,700	21,100	300	21,400
Fuelwood	64,700	27,300	92,000	364,100	254,200	618,300
Miscellaneous farm use	4,000	1,100	5,100	29,800	9,000	38,800
Total	387,200	248,100	635,300	1,257,400	766,200	2,023,600
Piedmont:						
Lumber	101,300	8,000	109,300	299,600	20,600	320,200
Veneer	-	3,700	3,700	-	9,500	9,500
Cooperage	-	1,000	1,000	-	2,700	2,700
Pulpwood	5,600	1,000	6,600	24,700	13,500	38,200
Other manufactures	200	400	600	700	1,400	2,100
Hewn crossties	700	4,200	4,900	1,900	10,800	12,700
Poles and piles	2,200	-	2,200	6,500	-	6,500
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	178,500	57,000	235,500	747,600	350,400	1,098,000
State of South Carolina:						
Lumber	442,700	181,200	623,900	1,148,700	405,400	1,554,100
Veneer	9,700	89,000	98,700	24,000	205,100	229,100
Cooperage	6,500	8,100	14,600	16,300	19,200	35,500
Pulpwood	101,100	2,600	103,700	362,700	21,600	384,300
Other manufactures	2,600	8,300	10,900	6,700	18,300	25,000
Hewn crossties	29,100	21,700	50,800	72,500	50,200	122,700
Poles and piles	18,600	200	18,800	47,700	300	48,000
Fuelwood	152,100	86,100	238,200	830,200	637,700	1,467,900
Miscellaneous farm use	11,000	3,200	14,200	82,700	24,900	107,600
Total	773,400	400,400	1,173,800	2,591,500	1,382,700	3,974,200

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1939

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	160,100	56,600	216,700	398,300	119,900	518,200
Veneer	2,400	19,800	22,200	6,000	43,100	49,100
Cooperage	4,600	200	4,800	11,900	300	12,200
Pulpwood	36,700	-	36,700	121,400	-	121,400
Other manufactures	200	2,100	2,300	600	4,800	5,400
Hewn crossties	2,500	4,600	7,100	6,100	9,900	16,000
Poles and piles	8,800	-	8,800	23,500	-	23,500
Fuelwood	23,600	21,400	45,000	87,700	101,400	189,100
Miscellaneous farm use	2,000	600	2,600	14,200	4,300	18,500
Total	240,900	105,300	346,200	669,700	283,700	953,400
Northern Coastal Plain:						
Lumber	245,900	131,500	377,400	611,600	290,900	902,500
Veneer	4,100	52,100	56,200	10,100	121,200	131,300
Cooperage	700	7,300	8,000	1,700	17,100	18,800
Pulpwood	106,900	3,900	110,800	359,000	11,600	370,600
Other manufactures	1,500	4,900	6,400	4,500	11,000	15,500
Hewn crossties	2,100	5,400	7,500	5,400	11,600	17,000
Poles and piles	19,200	100	19,300	54,200	100	54,300
Fuelwood	72,900	29,900	102,800	413,100	296,500	709,600
Miscellaneous farm use	3,700	1,000	4,700	27,100	8,100	35,200
Total	457,000	236,100	693,100	1,486,700	768,100	2,254,800
Piedmont:						
Lumber	160,800	11,000	171,800	475,700	28,200	503,900
Veneer	500	4,900	5,400	1,500	12,600	14,100
Cooperage	-	-	-	-	-	-
Pulpwood	13,000	1,100	14,100	53,200	5,400	58,600
Other manufactures	400	200	600	1,600	1,100	2,700
Hewn crossties	1,400	2,200	3,600	4,300	5,600	9,900
Poles and piles	1,700	-	1,700	5,100	-	5,100
Fuelwood	68,300	37,700	106,000	395,700	287,300	683,000
Miscellaneous farm use	3,900	1,100	5,000	30,200	9,100	39,300
Total	250,000	58,200	308,200	967,300	349,300	1,316,600
State of South Carolina:						
Lumber	566,800	199,100	765,900	1,485,600	439,000	1,924,600
Veneer	7,000	76,800	83,800	17,600	176,900	194,500
Cooperage	5,300	7,500	12,800	13,600	17,400	31,000
Pulpwood	156,600	5,000	161,600	533,600	17,000	550,600
Other manufactures	2,100	7,200	9,300	6,700	16,900	23,600
Hewn crossties	6,000	12,200	18,200	15,800	27,100	42,900
Poles and piles	29,700	100	29,800	82,800	100	82,900
Fuelwood	164,800	89,000	253,800	896,500	685,200	1,581,700
Miscellaneous farm use	9,600	2,700	12,300	71,500	21,500	93,000
Total	947,900	399,600	1,347,500	3,123,700	1,401,100	4,524,800

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1940

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	175,700	52,000	227,700	437,100	111,500	548,600
Veneer	2,500	18,500	21,000	6,100	40,400	46,500
Cooperage	5,100	200	5,300	13,300	400	13,700
Pulpwood	48,800	200	49,000	158,700	1,000	159,700
Other manufactures	100	3,600	3,700	600	7,900	8,500
Hewn crossties	3,200	6,600	9,800	8,000	13,900	21,900
Poles and piles	9,900	-	9,900	25,700	-	25,700
Fuelwood	23,600	21,400	45,000	87,800	101,300	189,100
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	270,900	103,000	373,900	750,800	280,500	1,031,300
Northern Coastal Plain:						
Lumber	252,500	170,000	422,500	628,200	378,900	1,007,100
Veneer	4,000	56,400	60,400	10,100	132,200	142,300
Cooperage	700	9,200	9,900	1,700	21,500	23,200
Pulpwood	118,800	4,300	123,100	399,200	14,200	413,400
Other manufactures	1,600	5,300	6,900	4,500	11,900	16,400
Hewn crossties	4,900	5,700	10,600	12,100	12,800	24,900
Poles and piles	18,500	-	18,500	51,700	-	51,700
Fuelwood	72,400	29,700	102,100	399,200	266,200	665,400
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	477,000	281,600	758,600	1,533,200	845,600	2,378,800
Piedmont:						
Lumber	202,500	22,200	224,700	599,100	56,800	655,900
Veneer	600	5,500	6,100	1,800	14,000	15,800
Cooperage	-	-	-	-	-	-
Pulpwood	11,000	3,800	14,800	44,900	52,300	97,200
Other manufactures	400	200	600	1,700	1,200	2,900
Hewn crossties	3,100	2,900	6,000	9,200	7,400	16,600
Poles and piles	1,800	-	1,800	5,400	-	5,400
Fuelwood	68,800	37,800	106,600	397,700	288,300	686,000
Miscellaneous farm use	3,700	1,000	4,700	28,800	8,600	37,400
Total	291,900	73,400	365,300	1,088,600	428,600	1,517,200
State of South Carolina:						
Lumber	630,700	244,200	874,900	1,664,400	547,200	2,211,600
Veneer	7,100	80,400	87,500	18,000	186,600	204,600
Cooperage	5,800	9,400	15,200	15,000	21,900	36,900
Pulpwood	178,600	8,300	186,900	602,800	67,500	670,300
Other manufactures	2,100	9,100	11,200	6,800	21,000	27,800
Hewn crossties	11,200	15,200	26,400	29,300	34,100	63,400
Poles and piles	30,200	-	30,200	82,800	-	82,800
Fuelwood	164,800	88,900	253,700	884,700	655,800	1,540,500
Miscellaneous farm use	9,300	2,500	11,800	68,800	20,600	89,400
Total	1,039,800	458,000	1,497,800	3,372,600	1,554,700	4,927,300

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1941

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	222,500	42,700	265,200	553,500	89,600	643,100
Veneer	2,900	21,800	24,700	7,100	47,800	54,900
Cooperage	5,500	200	5,700	13,700	500	14,200
Pulpwood	85,100	300	85,400	277,000	2,000	279,000
Other manufactures	100	4,100	4,200	200	9,700	9,900
Hewn crossties	2,300	4,800	7,100	5,800	10,200	16,000
Poles and piles	9,500	-	9,500	24,700	-	24,700
Fuelwood	23,600	21,400	45,000	87,800	101,300	189,100
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	353,500	95,800	449,300	983,300	265,200	1,248,500
Northern Coastal Plain:						
Lumber	357,900	220,300	578,200	890,300	489,900	1,380,200
Veneer	4,700	66,600	71,300	11,800	156,100	167,900
Cooperage	1,000	14,800	15,800	2,500	34,700	37,200
Pulpwood	111,300	9,300	120,600	376,000	32,200	408,200
Other manufactures	1,200	5,100	6,300	2,900	12,000	14,900
Hewn crossties	3,600	4,100	7,700	8,900	9,300	18,200
Poles and piles	17,700	-	17,700	49,500	-	49,500
Fuelwood	72,400	29,700	102,100	399,200	266,200	665,400
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	573,400	350,900	924,300	1,767,600	1,008,300	2,775,900
Piedmont:						
Lumber	221,800	34,500	256,300	656,100	88,500	744,600
Veneer	700	6,400	7,100	2,100	16,500	18,600
Cooperage	-	-	-	-	-	-
Pulpwood	19,300	4,500	23,800	74,000	36,700	110,700
Other manufactures	300	300	600	1,400	1,400	2,800
Hewn crossties	2,300	2,100	4,400	6,700	5,400	12,100
Poles and piles	1,700	-	1,700	5,200	-	5,200
Fuelwood	68,800	37,800	106,600	397,700	288,300	686,000
Miscellaneous farm use	3,700	1,000	4,700	28,800	8,600	37,400
Total	318,600	86,600	405,200	1,172,000	445,400	1,617,400
State of South Carolina:						
Lumber	802,200	297,500	1,099,700	2,099,900	668,000	2,767,900
Veneer	8,300	94,800	103,100	21,000	220,400	241,400
Cooperage	6,500	15,000	21,500	16,200	35,200	51,400
Pulpwood	215,700	14,100	229,800	727,000	70,900	797,900
Other manufactures	1,600	9,500	11,100	4,500	23,100	27,600
Hewn crossties	8,200	11,000	19,200	21,400	24,900	46,300
Poles and piles	28,900	-	28,900	79,400	-	79,400
Fuelwood	164,800	88,900	253,700	884,700	655,800	1,540,500
Miscellaneous farm use	9,300	2,500	11,800	68,800	20,600	89,400
Total	1,245,500	533,300	1,778,800	3,922,900	1,718,900	5,641,800

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1942

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	230,600	47,600	278,200	573,700	101,200	674,900
Veneer	2,100	24,600	26,700	5,200	53,900	59,100
Cooperage	5,000	200	5,200	12,500	400	12,900
Pulpwood	102,200	400	102,600	332,300	2,800	335,100
Other manufactures	200	3,900	4,100	600	9,300	9,900
Hewn crossties	3,100	6,400	9,500	7,700	13,500	21,200
Poles and piles	12,300	-	12,300	32,200	-	32,200
Fuelwood	21,800	19,600	41,400	80,800	93,000	173,800
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	379,300	103,200	482,500	1,058,500	278,200	1,336,700
Northern Coastal Plain:						
Lumber	365,600	176,400	542,000	909,300	392,700	1,302,000
Veneer	4,400	59,700	64,100	10,900	140,100	151,000
Cooperage	1,200	14,900	16,100	3,100	34,700	37,800
Pulpwood	138,500	3,900	142,400	467,100	16,000	483,100
Other manufactures	900	4,600	5,500	2,200	11,100	13,300
Hewn crossties	4,700	5,600	10,300	11,800	12,400	24,200
Poles and piles	23,100	-	23,100	64,600	-	64,600
Fuelwood	66,900	27,400	94,300	372,000	253,600	625,600
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	608,900	293,500	902,400	1,867,500	868,500	2,736,000
Piedmont:						
Lumber	228,400	29,400	257,800	675,600	75,500	751,100
Veneer	600	5,200	5,800	1,800	13,200	15,000
Cooperage	-	-	-	-	-	-
Pulpwood	24,200	4,300	28,500	92,500	35,400	127,900
Other manufactures	400	500	900	2,100	2,200	4,300
Hewn crossties	3,000	2,800	5,800	8,900	7,200	16,100
Poles and piles	2,300	-	2,300	6,700	-	6,700
Fuelwood	63,500	34,600	98,100	367,000	265,100	632,100
Miscellaneous farm use	3,700	1,100	4,800	28,800	8,600	37,400
Total	326,100	77,900	404,000	1,183,400	407,200	1,590,600
State of South Carolina:						
Lumber	824,600	253,400	1,078,000	2,158,600	569,400	2,728,000
Veneer	7,100	89,500	96,600	17,900	207,200	225,100
Cooperage	6,200	15,100	21,300	15,600	35,100	50,700
Pulpwood	264,900	8,600	273,500	891,900	54,200	946,100
Other manufactures	1,500	9,000	10,500	4,900	22,600	27,500
Hewn crossties	10,800	14,800	25,600	28,400	33,100	61,500
Poles and piles	37,700	-	37,700	103,500	-	103,500
Fuelwood	152,200	81,600	233,800	819,800	611,700	1,431,500
Miscellaneous farm use	9,300	2,600	11,900	68,800	20,600	89,400
Total	1,314,300	474,600	1,788,900	4,109,400	1,553,900	5,663,300

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1943

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	218,800	42,700	261,500	544,300	90,500	634,800
Veneer	200	30,400	30,600	500	66,600	67,100
Cooperage	4,900	100	5,000	12,100	300	12,400
Pulpwood	85,100	2,500	87,600	277,900	8,500	286,400
Other manufactures	300	3,600	3,900	800	8,700	9,500
Hewn crossties	10,400	2,400	12,800	26,000	5,000	31,000
Poles and piles	8,500	-	8,500	22,100	-	22,100
Fuelwood	21,800	19,600	41,400	80,800	93,000	173,800
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	352,000	101,800	453,800	978,000	276,700	1,254,700
Northern Coastal Plain:						
Lumber	349,000	129,500	478,500	868,000	288,000	1,156,000
Veneer	2,100	61,800	63,900	5,300	145,000	150,300
Cooperage	1,500	11,100	12,600	3,700	25,900	29,600
Pulpwood	97,900	2,600	100,500	329,700	10,500	340,200
Other manufactures	1,200	4,300	5,500	3,000	10,800	13,800
Hewn crossties	8,900	1,900	10,800	22,300	4,200	26,500
Poles and piles	15,900	-	15,900	44,500	-	44,500
Fuelwood	66,900	27,400	94,300	372,000	253,600	625,600
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	547,000	239,600	786,600	1,675,000	745,900	2,420,900
Piedmont:						
Lumber	221,400	22,000	243,400	654,900	56,400	711,300
Veneer	-	5,900	5,900	-	15,100	15,100
Cooperage	-	-	-	-	-	-
Pulpwood	87,400	2,700	90,100	328,400	19,800	348,200
Other manufactures	400	500	900	1,800	2,400	4,200
Hewn crossties	2,000	5,100	7,100	6,000	13,000	19,000
Poles and piles	1,500	-	1,500	4,700	-	4,700
Fuelwood	63,500	34,600	98,100	367,000	265,100	632,100
Miscellaneous farm use	3,700	1,100	4,800	28,800	8,600	37,400
Total	379,900	71,900	451,800	1,391,600	380,400	1,772,000
State of South Carolina:						
Lumber	789,200	194,200	983,400	2,067,200	434,900	2,502,100
Veneer	2,300	98,100	100,400	5,800	226,700	232,500
Cooperage	6,400	11,200	17,600	15,800	26,200	42,000
Pulpwood	270,400	7,800	278,200	936,000	38,800	974,800
Other manufactures	1,900	8,400	10,300	5,600	21,900	27,500
Hewn crossties	21,300	9,400	30,700	54,300	22,200	76,500
Poles and piles	25,900	-	25,900	71,300	-	71,300
Fuelwood	152,200	81,600	233,800	819,800	611,700	1,431,500
Miscellaneous farm use	9,300	2,600	11,900	68,800	20,600	89,400
Total	1,278,900	413,300	1,692,200	4,044,600	1,403,000	5,447,600

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

Table 3. - Net volume[1] in cords by county in South Carolina, 1936.
(All sound trees 5.0 inches d.b.h., including saw timber)

County	Total Volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Abbeville	694	559	1,253	4.5	3.6	8.1
Aiken	1,952	954	2,906	4.6	2.2	6.8
Allendale	654	849	1,503	3.9	5.2	9.1
Anderson	627	458	1,085	4.4	3.3	7.7
Bamberg	376	846	1,222	3.5	7.8	11.3
Barnwell[2]	641	818	1,459	4.6	5.9	10.5
Beaufort[2]	1,271	684	1,955	10.6	5.7	16.3
Berkeley	4,419	3,494	7,913	7.0	5.6	12.6
Calhoun	785	976	1,761	6.2	7.7	13.9
Charleston	2,043	1,994	4,037	8.1	7.9	16.0
Cherokee	384	243	627	5.3	3.3	8.6
Chester	864	401	1,265	5.3	2.4	7.7
Chesterfield	1,349	917	2,266	4.5	3.1	7.6
Clarendon	1,235	1,456	2,691	5.2	6.1	11.3
Colleton	4,455	4,137	8,592	8.8	8.2	17.0
Darlington	1,237	972	2,209	6.9	5.5	12.4
Dillon	679	1,585	2,264	4.1	9.5	13.6
Dorchester	3,077	3,505	6,582	10.1	11.5	21.6
Edgefield	1,372	389	1,761	7.2	2.0	9.2
Fairfield	2,197	518	2,715	7.5	1.7	9.2
Florence	1,412	1,384	2,796	6.0	5.8	11.8
Georgetown	3,612	2,295	5,907	9.1	5.8	14.9
Greenville	1,264	997	2,261	5.4	4.2	9.6
Greenwood	940	568	1,508	6.5	4.0	10.5
Hampton	1,008	1,275	2,283	4.9	6.2	11.1
Horry	3,625	3,025	6,650	6.5	5.5	12.0
Jasper	1,093	1,884	2,977	4.3	7.3	11.6
Kershaw	1,209	568	1,777	6.2	2.9	9.1
Lancaster	1,140	561	1,701	6.0	2.9	8.9
Laurens	1,120	949	2,069	5.5	4.7	10.2
Lee	524	621	1,145	5.2	6.1	11.3
Lexington	1,999	620	2,619	7.0	2.2	9.2
Marion	738	1,532	2,270	3.2	6.7	9.9
Marlboro	736	1,371	2,107	4.8	8.9	13.7
McCormick	989	369	1,358	6.6	2.5	9.1
Newberry	1,466	414	1,880	7.3	2.1	9.4
Oconee	1,499	1,044	2,543	5.8	4.0	9.8
Orangeburg	2,184	2,390	4,574	6.2	6.9	13.1
Pickens	1,005	1,042	2,047	5.2	5.3	10.5
Richland	1,903	1,537	3,440	6.4	5.1	11.5
Saluda	1,098	350	1,448	7.4	2.3	9.7
Spartanburg	1,154	467	1,621	8.0	3.3	11.3
Sumter	793	2,146	2,939	4.1	10.9	15.0
Union	988	386	1,374	6.3	2.5	8.8
Williamsburg	2,202	3,347	5,549	5.9	9.0	14.9
York	714	510	1,224	5.0	3.5	8.5
All counties	66,726	57,407	124,133	6.2	5.4	11.6

1/Volume on commercial forest land.
2/The timber on the coastal islands of Beaufort County is not included.

Corrected Copy

Table 4. - Forest and nonforest area by county in North Carolina, 1938.

County	Total land area	Nonforest area	Forest area			
			Public reserved	Noncommercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres	Acres
Alamance	314,900	173,700	-	2,500	138,700	141,200
Alexander	185,000	95,200	-	-	89,800	89,800
Alleghany	149,800	97,100	-	-	52,700	52,700
Anson	355,800	163,800	-	-	192,000	192,000
Ashe	273,300	177,600	-	-	95,700	95,700
Avery	152,300	52,900	-	-	99,400	99,400
Beaufort	537,600	167,300	-	-	370,300	370,300
Bertie	449,900	147,000	-	-	302,900	302,900
Bladen	624,600	107,800	-	2,400	514,400	516,800
Brunswick	505,600	78,400	-	3,300	423,900	427,200
Buncombe	436,500	147,800	-	1,600	287,100	288,700
Burke	341,800	88,200	-	800	252,800	253,600
Cabarrus	249,600	156,200	-	-	93,400	93,400
Caldwell	301,400	82,400	-	-	219,000	219,000
Camden	140,800	55,700	-	-	85,100	85,100
Carteret	366,700	93,700	-	-	273,000	273,000
Caswell	257,300	148,300	-	-	109,000	109,000
Catawba	261,100	154,100	-	-	107,000	107,000
Chatham	445,400	170,800	-	-	274,600	274,600
Cherokee	290,600	56,600	-	800	233,200	234,000
Chowan	105,600	62,300	-	-	43,300	43,300
Clay	140,800	28,700	-	-	112,100	112,100
Cleveland	317,400	211,600	-	-	105,800	105,800
Columbus	597,200	128,400	-	-	468,800	468,800
Craven	422,400	94,300	-	-	328,100	328,100
Cumberland	428,800	144,400	-	4,100	280,300	284,400
Currituck	186,900	102,100	-	-	84,800	84,800
Dare	241,300	75,000	-	-	166,300	166,300
Davidson	364,200	195,800	-	-	168,400	168,400
Davie	165,100	112,700	-	-	52,400	52,400
Duplin	505,600	171,400	-	800	333,400	334,200
Durham	199,700	75,600	-	-	124,100	124,100
Edgecombe	325,800	189,600	-	-	136,200	136,200
Forsyth	248,300	158,900	-	-	89,400	89,400
Franklin	299,500	159,500	-	-	140,000	140,000
Gaston	232,300	159,300	-	-	73,000	73,000
Gates	229,800	60,700	-	-	169,100	169,100
Graham	190,700	30,100	-	800	159,800	160,600
Granville	321,900	134,500	-	-	187,400	187,400
Greene	161,300	92,600	-	-	68,700	68,700
Guilford	442,200	250,900	-	-	191,300	191,300
Halifax	432,600	234,700	-	-	197,900	197,900
Harnett	376,300	144,100	-	-	232,200	232,200
Haywood	349,400	139,900	59,100	800	149,600	209,500
Henderson	229,100	92,800	-	800	135,500	136,300
Hertford	218,200	79,200	-	-	139,000	139,000
Hoke	266,900	88,000	-	-	178,900	178,900
Hyde	394,900	99,900	-	-	295,000	295,000
Iredell	376,300	241,400	-	-	134,900	134,900
Jackson	316,200	65,400	-	7,300	243,500	250,800

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1936

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	1	5,817	476	3,188	9,481	19,534	1,659	17,892	39,085
	2	8,471	905	5,425	14,801	27,641	2,513	25,687	55,841
	3	4,143	-	1,692	5,835	19,031	-	9,995	29,026
	State	18,431	1,381	10,305	30,117	66,206	4,172	53,574	123,952
Growth	1	317	13	155	485	961	35	805	1,801
	2	531	19	236	786	1,556	45	1,049	2,650
	3	356	-	100	456	1,587	-	655	2,242
	State	1,204	32	491	1,727	4,104	80	2,509	6,693
Mortality	1	125	2	39	166	440	15	277	732
	2	67	4	59	130	231	21	335	587
	3	37	-	14	51	218	-	97	315
	State	229	6	112	347	889	36	709	1,634
Net growth	1	192	11	116	319	521	20	528	1,069
	2	464	15	177	656	1,325	24	714	2,063
	3	319	-	86	405	1,369	-	558	1,927
	State	975	26	379	1,380	3,215	44	1,800	5,059
Commodity drain	1	204	17	112	333	548	34	261	843
	2	411	23	201	635	1,249	44	651	1,944
	3	225	-	51	276	887	-	326	1,213
	State	840	40	364	1,244	2,684	78	1,238	4,000
Net change	1	-12	-6	+4	-14	-27	-14	+267	+226
	2	+53	-8	-24	+21	+76	-20	+63	+119
	3	+94	-	+35	+129	+482	-	+232	+714
	State	+135	-14	+15	+136	+531	-34	+562	+1,059
Growing stock, Jan. 1, 1937	1	5,805	470	3,192	9,467	19,507	1,645	18,159	39,311
	2	8,524	897	5,401	14,822	27,717	2,493	25,750	55,960
	3	4,237	-	1,727	5,964	19,513	-	10,227	29,740
	State	18,566	1,367	10,320	30,253	66,737	4,138	54,136	125,011

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1937

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1937	1	5,805	470	3,192	9,467	19,507	1,645	18,159	39,311
	2	8,524	897	5,401	14,822	27,717	2,493	25,750	55,960
	3	4,237	-	1,727	5,964	19,513	-	10,227	29,740
	State	18,566	1,367	10,320	30,253	66,737	4,138	54,136	125,011
Growth	1	330	13	157	500	978	36	848	1,862
	2	533	17	233	783	1,531	40	1,026	2,597
	3	356	-	101	457	1,572	-	659	2,231
	State	1,219	30	491	1,740	4,081	76	2,533	6,690
Mortality	1	75	2	38	115	263	16	269	548
	2	67	4	59	130	233	20	335	588
	3	37	-	15	52	222	-	98	320
	State	179	6	112	297	718	36	702	1,456
Net growth	1	255	11	119	385	715	20	579	1,314
	2	466	13	174	653	1,298	20	691	2,009
	3	319	-	86	405	1,350	-	561	1,911
	State	1,040	24	379	1,443	3,363	40	1,831	5,234
Commodity drain	1	228	11	101	340	646	21	281	948
	2	440	34	222	696	1,413	66	725	2,204
	3	191	-	60	251	794	-	364	1,158
	State	859	45	383	1,287	2,853	87	1,370	4,310
Net change	1	+27	-	+18	+45	+69	-1	+298	+366
	2	+26	-21	-48	-43	-115	-46	-34	-195
	3	+128	-	+26	+154	+556	-	+197	+753
	State	+181	-21	-4	+156	+510	-47	+461	+924
Growing stock, Jan. 1, 1938	1	5,832	470	3,210	9,512	19,576	1,644	18,457	39,677
	2	8,550	876	5,353	14,779	27,602	2,447	25,716	55,765
	3	4,365	-	1,753	6,118	20,069	-	10,424	30,493
	State	18,747	1,346	10,316	30,409	67,247	4,091	54,597	125,935

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1938

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1938	1	5,832	470	3,210	9,512	19,576	1,644	18,457	39,677
	2	8,550	876	5,353	14,779	27,602	2,447	25,716	55,765
	3	4,365	-	1,753	6,118	20,069	-	10,424	30,493
	State	18,747	1,346	10,316	30,409	67,247	4,091	54,597	125,935
Growth	1	332	13	158	503	984	35	859	1,878
	2	536	18	232	786	1,506	39	1,011	2,556
	3	362	-	101	463	1,575	-	640	2,215
	State	1,230	31	491	1,752	4,065	74	2,510	6,649
Mortality	1	75	2	38	115	264	16	273	553
	2	68	4	59	131	232	20	334	586
	3	38	-	15	53	229	-	100	329
	State	181	6	112	299	725	36	707	1,468
Net growth	1	257	11	120	388	720	19	586	1,325
	2	468	14	173	655	1,274	19	677	1,970
	3	324	-	86	410	1,346	-	540	1,886
	State	1,049	25	379	1,453	3,340	38	1,803	5,181
Commodity drain	1	208	8	87	303	587	15	251	853
	2	387	40	208	635	1,257	77	689	2,023
	3	178	-	57	235	748	-	350	1,098
	State	773	48	352	1,173	2,592	92	1,290	3,974
Net change	1	+49	+3	+33	+85	+133	+4	+335	+472
	2	+81	-26	-35	+20	+17	-58	-12	-53
	3	+146	-	+29	+175	+598	-	+190	+788
	State	+276	-23	+27	+280	+748	-54	+513	+1,207
Growing stock, Jan. 1, 1939	1	5,881	473	3,243	9,597	19,709	1,648	18,792	40,149
	2	8,631	850	5,318	14,799	27,619	2,389	25,704	55,712
	3	4,511	-	1,782	6,293	20,667	-	10,614	31,281
	State	19,023	1,323	10,343	30,689	67,995	4,037	55,110	127,142

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1939

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1939	1	5,881	473	3,243	9,597	19,709	1,648	18,792	40,149
	2	8,631	850	5,318	14,799	27,619	2,389	25,704	55,712
	3	4,511	-	1,782	6,293	20,667	-	10,614	31,281
	State	19,023	1,323	10,343	30,689	67,995	4,037	55,110	127,142
Growth	1	333	12	159	504	987	34	869	1,890
	2	537	18	231	786	1,504	38	1,013	2,555
	3	366	-	101	467	1,592	-	649	2,241
	State	1,236	30	491	1,757	4,083	72	2,531	6,686
Mortality	1	76	2	39	117	266	16	278	560
	2	68	4	58	130	232	20	334	586
	3	40	-	15	55	236	-	102	338
	State	184	6	112	302	734	36	714	1,484
Net growth	1	257	10	120	387	721	18	591	1,330
	2	469	14	173	656	1,272	18	679	1,969
	3	326	-	86	412	1,356	-	547	1,903
	State	1,052	24	379	1,455	3,349	36	1,817	5,202
Commodity drain	1	241	18	87	346	670	34	249	953
	2	457	45	191	693	1,487	86	682	2,255
	3	250	-	58	308	967	-	350	1,317
	State	948	63	336	1,347	3,124	120	1,281	4,525
Net change	1	+16	-8	+33	+41	+51	-16	+342	+377
	2	+12	-31	-18	-37	-215	-68	-3	-286
	3	+76	-	+28	+104	+389	-	+197	+586
	State	+104	-39	+43	+108	+225	-84	+536	+677
Growing stock, Jan. 1, 1940	1	5,897	465	3,276	9,638	19,760	1,632	19,134	40,526
	2	8,643	819	5,300	14,762	27,404	2,321	25,701	55,426
	3	4,587	-	1,810	6,397	21,056	-	10,811	31,867
	State	19,127	1,284	10,386	30,797	68,220	3,953	55,646	127,819

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1940

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1940	1	5,897	465	3,276	9,638	19,760	1,632	19,134	40,526
	2	8,643	819	5,300	14,762	27,404	2,321	25,701	55,426
	3	4,587	-	1,810	6,397	21,056	-	10,811	31,867
	State	19,127	1,284	10,386	30,797	68,220	3,953	55,646	127,819
Growth	1	333	13	160	506	987	34	879	1,900
	2	536	17	229	782	1,491	36	1,007	2,534
	3	368	-	101	469	1,603	-	652	2,255
	State	1,237	30	490	1,757	4,081	70	2,538	6,689
Mortality	1	76	2	39	117	267	16	283	566
	2	68	4	58	130	230	19	334	583
	3	40	-	15	55	240	-	104	344
	State	184	6	112	302	737	35	721	1,493
Net growth	1	257	11	121	389	720	18	596	1,334
	2	468	13	171	652	1,261	17	673	1,951
	3	328	-	86	414	1,363	-	548	1,911
	State	1,053	24	378	1,455	3,344	35	1,817	5,196
Commodity drain	1	271	12	91	374	751	22	258	1,031
	2	477	49	232	758	1,533	94	752	2,379
	3	292	-	73	365	1,089	-	428	1,517
	State	1,040	61	396	1,497	3,373	116	1,438	4,927
Net change	1	-14	-1	+30	+15	-31	-4	+338	+303
	2	-9	-36	-61	-106	-272	-77	-79	-428
	3	+36	-	+13	+49	+274	-	+120	+394
	State	+13	-37	-18	-42	-29	-81	+379	+269
Growing stock, Jan. 1, 1941	1	5,883	464	3,306	9,653	19,729	1,628	19,472	40,829
	2	8,634	783	5,239	14,656	27,132	2,244	25,622	54,998
	3	4,623	-	1,823	6,446	21,330	-	10,931	32,261
	State	19,140	1,247	10,368	30,755	68,191	3,872	56,025	128,088

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1941

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1941	1	5,883	464	3,306	9,653	19,729	1,628	19,472	40,829
	2	8,634	783	5,239	14,656	27,132	2,244	25,622	54,998
	3	4,623	-	1,823	6,446	21,330	-	10,931	32,261
	State	19,140	1,247	10,368	30,755	68,191	3,872	56,025	128,088
Growth	1	330	13	161	504	980	35	890	1,905
	2	534	17	227	778	1,465	33	999	2,497
	3	368	-	101	469	1,613	-	656	2,269
	State	1,232	30	489	1,751	4,058	68	2,545	6,671
Mortality	1	76	2	39	117	266	16	288	570
	2	68	4	58	130	228	18	333	579
	3	41	-	15	56	243	-	105	348
	State	185	6	112	303	737	34	726	1,497
Net growth	1	254	11	122	387	714	19	602	1,335
	2	466	13	169	648	1,237	15	666	1,918
	3	327	-	86	413	1,370	-	551	1,921
	State	1,047	24	377	1,448	3,321	34	1,819	5,174
Commodity drain	1	354	16	80	450	983	31	234	1,248
	2	573	65	286	924	1,768	125	883	2,776
	3	319	-	86	405	1,172	-	446	1,618
	State	1,246	81	452	1,779	3,923	156	1,563	5,642
Net change	1	-100	-5	+42	-63	-269	-12	+368	+87
	2	-107	-52	-117	-276	-531	-110	-217	-858
	3	+8	-	-	+8	+198	-	+105	+303
	State	-199	-57	-75	-331	-602	-122	+256	-468
Growing stock, Jan. 1, 1942	1	5,783	459	3,348	9,590	19,460	1,616	19,840	40,916
	2	8,527	731	5,122	14,380	26,601	2,134	25,405	54,140
	3	4,631	-	1,823	6,454	21,528	-	11,036	32,564
	State	18,941	1,190	10,293	30,424	67,589	3,750	56,281	127,620

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1942

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1942	1	5,783	459	3,348	9,590	19,460	1,616	19,840	40,916
	2	8,527	731	5,122	14,380	26,601	2,134	25,405	54,140
	3	4,631	-	1,823	6,454	21,528	-	11,036	32,564
	State	18,941	1,190	10,293	30,424	67,589	3,750	56,281	127,620
Growth	1	325	13	162	500	966	35	900	1,901
	2	526	15	222	763	1,428	32	975	2,435
	3	368	-	102	470	1,620	-	661	2,281
	State	1,219	28	486	1,733	4,014	67	2,536	6,617
Mortality[1/]	1	75	3	40	118	263	16	293	572
	2	82	8	130	220	349	61	922	1,332
	3	41	-	15	56	245	-	106	351
	State	198	11	185	394	857	77	1,321	2,255
Net growth	1	250	10	122	382	703	19	607	1,329
	2	444	7	92	543	1,079	-29	53	1,103
	3	327	-	87	414	1,375	-	555	1,930
	State	1,021	17	301	1,339	3,157	-10	1,215	4,362
Commodity drain	1	379	13	90	482	1,058	26	253	1,337
	2	609	52	242	903	1,868	99	769	2,736
	3	326	-	78	404	1,183	-	407	1,590
	State	1,314	65	410	1,789	4,109	125	1,429	5,663
Net change	1	-129	-3	+32	-100	-355	-7	+354	-8
	2	-165	-45	-150	-360	-789	-128	-716	-1,633
	3	+1	-	+9	+10	+192	-	+148	+340
	State	-293	-48	-109	-450	-952	-135	-214	-1,301
Growing stock, Jan. 1, 1943	1	5,654	456	3,380	9,490	19,105	1,609	20,194	40,908
	2	8,362	686	4,972	14,020	25,812	2,006	24,689	52,507
	3	4,632	-	1,832	6,464	21,720	-	11,184	32,904
	State	18,648	1,142	10,184	29,974	66,637	3,615	56,067	126,319

1/Mortality in Unit 2 includes the volume of timber destroyed as a result of the flooding of the Santee-Cooper reservoirs.

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1943

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1943	1	5,654	456	3,380	9,490	19,105	1,609	20,194	40,908
	2	8,362	686	4,972	14,020	25,812	2,006	24,689	52,507
	3	4,632	-	1,832	6,464	21,720	-	11,184	32,904
	State	18,648	1,142	10,184	29,974	66,637	3,615	56,067	126,319
Growth	1	320	13	163	496	954	35	910	1,899
	2	522	15	222	759	1,408	32	983	2,423
	3	366	-	102	468	1,623	-	667	2,290
	State	1,208	28	487	1,723	3,985	67	2,560	6,612
Mortality	1	73	3	40	116	258	16	299	573
	2	66	3	55	124	217	16	321	554
	3	40	-	15	55	247	-	107	354
	State	179	6	110	295	722	32	727	1,481
Net growth	1	247	10	123	380	696	19	611	1,326
	2	456	12	167	635	1,191	16	662	1,869
	3	326	-	87	413	1,376	-	560	1,936
	State	1,029	22	377	1,428	3,263	35	1,833	5,131
Commodity drain	1	352	12	90	454	978	23	254	1,255
	2	547	37	202	786	1,675	71	675	2,421
	3	380	-	72	452	1,392	-	380	1,772
	State	1,279	49	364	1,692	4,045	94	1,309	5,448
Net change	1	-105	-2	+33	-74	-282	-4	+357	+71
	2	-91	-25	-35	-151	-484	-55	-13	-552
	3	-54	-	+15	-39	-16	-	+180	+164
	State	-250	-27	+13	-264	-782	-59	+524	-317
Growing stock, Jan. 1, 1944	1	5,549	454	3,413	9,416	18,823	1,605	20,551	40,979
	2	8,271	661	4,937	13,869	25,328	1,951	24,676	51,955
	3	4,578	-	1,847	6,425	21,704	-	11,364	33,068
	State	18,398	1,115	10,197	29,710	65,855	3,556	56,591	126,002

Forest Survey Reports
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Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. July 15, 1939

No. 2 - Forest Resources of the Piedmont Region of South Carolina. September 1, 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. December 1, 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. April 1, 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina. June 15, 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina. November 15, 1940

No. 7 - Forest Resources of the Mountain Region of North Carolina. April 1, 1941

No. 8 - The Distribution of Commercial Forest Trees in North Carolina. May 15, 1941

No. 9 - The Distribution of Commercial Forest Trees in South Carolina. May 15, 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia. September 15, 1942

No. 11 - Virginia's Forests. November 1, 1942

No. 12 - The Forest Situation in the Coastal Plain of Virginia. April 1, 1943

No. 13 - The Forest Situation in Piedmont Virginia. May 15, 1943

No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. November 1, 1943

No. 15 - The Forest Situation in the Mountain Region of Virginia. December 15, 1943

No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. November 15, 1944

No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. December 15, 1944

No. 18 - North Carolina Forest Growth and Drain, 1937-1943. January 31, 1945

No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. April 1, 1945

USDA Miscellaneous Publications

No. 533 - North Carolina Forest Resources and Industries. January 1944

No. 552 - South Carolina Forest Resources and Industries. November 1944